FORESTRY ABSTRACTS

VOLUME 13. 1951–52

INDEXES

		PAGE
1.	AUTHORS - - - - - - -	2
2.	SPECIES - - - - - - -	23
3.	SUBJECT - - - - - - -	35
4.	GEOGRAPHICAL - - - - - -	49

The reference number refers to the serial number of the abstract, which is given at the *head* of the title.

Reference numbers with "p." prefixed refer to page numbers.

Numbers in **bold type** in the Species, Subject, and Geographical Indexes refer to matter in Sections 3, 7, and 8, and thus form an index to the separate issue of *Forest Products and Utilization Abstracts*.

The Editor would be glad to have any errors brought to his notice

AUTHORS INDEX

AALTONEN, V. T. 1815, 3559
Aamodt, E. E. 390, 2241
Aaron, J. R. 4334
Abbot, R. W., and McNeel, W. 877
Abdullaeva, A. A. 2626
Abe, Y. *see* Oshawa, M.
Abolj, I. P. *see* Lepencov, P. A.
Acatay, A. 3671, 3672
Acosta Solis, M. 1887, 2175
Adam, J. 2797
Adams, A. J. S. 1394
Adams, D. F. *see* Shaw, C. G.
Adams, J. E. 604
Adams, L. 451, 2282
Adams, M. F. *see* Shaw, C. G.
Adler, E. 2588
—, and Stockman, L. 1701
Afanasijev, D. 3826
Afanasjev, A. P. 247
Afridi, F. G. 1189, 2034, 2113
Agcaoili, F. *see* Alde, M. R.
Agostini, R. 2888
Ahmad, D. 881
Ahmad, M. M. 881
Ahmad, R. 881
Ahmad, S. 881
Ahmad, Y. S. 1092, 2045
Ahmed, M. U. 1243
Ahonen, L. 2355
Ahrens, L., and Vandenput, R. 2196
Ahromeĭko, A. I. 4433
Aihara, T. 2635
Aikman, J. M. *see* Cooper, G. R.
Airy Shaw, H. K. 3673
Akai, S., and Hemmi, T. 3103
—, and Hibino, K. 3423
—, and Nagatomo, I. 3424
—, and Terasita, T. 3422
Akamine, E. K. 1132, 2921
Åkerhielm, L. 220
Akins, V., and Pillow, M. Y. 3300
Albo, G. 2834
Alde, M. R., Agcaoili, F., and J.-Cochico, R. 824
Aleem, S. A. 875
Alex, J. F. 1307
Alexandrowicz, B. W. 1812
Alexis, A. D. 3430
Algar, W. H., and Giertz, H. W. 2438
—, Giertz, H. W., and Gustafsson, A.-M. 777
Ali, S. A. 3018
Allan, W., and Edgerley, L. F. 836
Allard, H. A. 68
Allen, A. A., and Lloyd, R. W. 47
Allen, G. S., Griffith, B. G., and Ker, J. W. 301
Allen, J. W. 2584
Allen, S. W. 834
Alliot, H. 3427
Allison, B. J., and Morrison, A. 1415
Allouard, P., and Conrard, J. 2205
Allsop, F. 1152
Almeida, D. Guilherme de, Araujo, P. A. de Matos, and Barbos, E. Pinto de 4171
Almeida, J. L. Ferreira de 79, 1009, 3607
Alphen de Veer, E. J. van, and Lunel, F. A. V. 266
—, and Sudiro, M. 3157
Altona, R. E. 1227
Ambler, H. R., and McCrea, G. W. 742
Ambrož, J. 3708
Améen-Malmström, H. 2691
Amos, G. L. 4164, 4225
—, Bisset, I. J. W., and Dadswell, H. E. 1544
Amshoff, G. J. H. 112
Anagnostopoulos, P. 1937
Andersen, M. 2341, 3821
Anderson, A. B., and Runckel, W. J. 1709, 3474
Anderson, E. A. 2138
Anderson, H., and Steeden, H. 1716
Anderson, I. V. 784
Anderson, M. L. 1933, 2091, 4475
Anderson, R. L. *see* Christensen, C. M.
Andersson, J., Schaub, C., and Simonsson, Å. 3354
Andrada, E. Campos. 4081
Andreoni, A. *see* Brotero, F. A.
Andrews, L. R. 1762
Andrews, S. R. *see* Gill, L. S.
Androič, M. 1379, 1382, 4051
Angus, T. A. 1376
Anhaeusser, H. *see* Kühlwein, H.
Ankudinov, A. M. 1149, 3096
Antoniotti, G. B. 1419, 2323, 2327, 2328, 2342, 2343
Anttila, A. 564
Anvery, S. A. A. 845
Aoshima, K. 972, 1324
Aoshima, T. 3099
Appelroth, E. 2500
Araujo, P. A. de Matos *see* Almeida, D. Guilherme de
Arbogast, C., Jr. 3260
Ardizio, P. *see* Naves, Y.-R.
Arend, A. G. 1581
Arend, J. L. 1307
—, and Gysel, L. W. 2334
—, and Stephenson, J. R. 2997
Aries, R. S. 788
Arman, V. 2667
Armayor, A. F. *see* Dantin-Gallego, J.
Armbruster, E. 1516
Armstrong, F. H. 637, 1520, 2427
Armstrong, L. D. *see* Kingston, R. S. T.
Armstrong, W. D., and Brison, F. R. 1164
Armstrong, W. N. B., Lyons, R. H., Roulston, L. C., and Turner, J. R. 2483
Arnao, G. *see* Ximenez de Embun, J.
Arnborg, T. 2954, 2989, 3001
Arner, D. H. 1845
Arneson, G. N. 696
Aron, G. *see* Rys, L.
Arrigoni, A. 563, 2708
Arruda, E. Rezende de 4406
Arthur, J. C. Jr. *see* Hogan, J. T.
Artimo, A. 3922
Ash, L. W. 1261
Ashton, L. A. *see* Webster, C. J.
Assmann, E. 2994
Asunmaa, S., and Lange, P. W. 4211
Atchison, E. 78, 3611
Attenberger, J. 1814
Aubréville, A. 2381
Audas, J. W. 3642
Auer, V. 1970
Aughanbaugh, J. E. 123
Avila Hernandez, M. 1247
Azambuja, D. de 3649

B., R. 4438
Babcock, J. T. W. 678
Bach, R. 896
Bacon, L. R., and Conklin, D. B. 4336
Badcock, C. G., Cavill, G. W. K., Robertson, A., and Whalley, W. B. 647
Badger, G. M., and Beecham, A. F. 935
Badoux, E. 552
Badré, L. 2007
Baechler, R. H. 3408
—, and Richards, C. A. 2516
Bagchee, K., and Bakshi, B. K. 749, 3980
Bagchee, K. D. 2269, 2270
Baggiolini, M., Geier, P., and Mathys, G. 2292
Bailey, A. 1528
Bailey, I. W. 4200
Baird, P. K. *see* Schwartz, S. L.
Bakarcic, M. 2268
Baker, F. S. 834, 1090
Baker, W. J. 577
Bakke, A. L. 1307
Bakker, A. J., and Wijk, C. L. van 1836
Bakshi, B. K. 515, 3419
—, and Bagchee, K. 749, 3980
Balabán, K. 93, 3631
Balachowsky, A. 917
Balansard, J., and Bernard, P. 2632
Balcells, E. 2756
Balch, R. E. 459, 4022
Baldacci, E., and Orsenigo, M. 3116
Baldwin, H. I. 1999, 2190, 3479
—, and Pleasonton, A. 2960
Ball, E. 2787
Ballou, C. E., and Percival, E. G. V. 4224
Bally, P. R. O., Mohr, K., and Reichstein, T. 4414
Balsay, L. 2963
Balzer, I. 1643
Banerjee, A. *see* Narayanamurti, D.
Bannan, M. W. 608, 1494, 4166
Bannister, T. T. *see* Kramer, P. J.
Barbour, W. R. 4161
Bardía Bardía, R. *see* Vives Comallonga, L. V.
Bardyšev, I. I., Pirjatinskiĭ, A. L., Bardyševa, K. V., and Černjaeva, O. I. 814
Bardyševa, K. V. *see* Bardyšev, I. I.
Barlow, H. W. B. *see* Preston, A. P.
Barnard, C. 3491

Barnard, R. C. 281, 1148
Barner, H. 2061
Barnett, H. L. 3105
Barney, C. W. 1034
Barraclough, S., and Gould, E. M., Jr. 3544
Barreto, H. L. de Mello 2862
Barrons, K. C. *see* Mullison, W. R.
Barros, E. Pinto de *see* Almeida, D. Guilherme de
Barroso, L. Joaquim 100, 101, 102
Barrow, G. P. 2421
Barrows, J. S. 1289, 1292, 2230
Barry, R. 2520
Barter, G. W. 459
— *see* Reeks, W. A.
— *see* Smith, C. C.
Bartlett, H. H. 3623
Barton, D. H. R., Bruun, T., and Sörensen, N. A. 3596
Barton, L. V. 2925
Baryšnikov, A. *see* Oreškin, S. L.
Basham, J. T. 472
Bassett, E. W. 587
Bassi, V. 2160
Basu, S. K. 2103
Bates, J. C. *see* Tischler, N.
Bathen, R. 3008
Batista, A. Chaves 3974
Battaglini, A. *see* Maymone, B.
Battenberg, E. *see* Haas, H.
Baumann, W. 3358
Baumeister, W. *see* Strugger, S.
Bavendamm, W. 741, 1638, 2556
Baxter, D. V. 2557, 3087
Bay, E. 166
Bayly, G. H. 865
Bayne, A., and Chrystal, R. N. 1387
Bazzalo, B. A., and García, J. J. M. 4084
Beall, H. W., Lowe, C. J., and Fraser, D. G. 389
Bean, J. L. *see* Heller, R. C.
Bean, W. J. 1880
Beard, J. S. 1308
—, and Darby, G. D. 1124
Beatty, R. H. *see* Geluwe, J. van
Becker, G. 3181
—, and Schulze, B. 1625
—, and Wiederholt, W. 3405
Becking, J. H. 1118, 2658
Beckman, C. H., Kuntz, J. E., Riker, A. J., and Berbee, J. G. 3107
— *see* Kuntz, J. E.
Beebe, C. W. *see* Rogers, J. S.
Beecham, A. F. *see* Badger, G. M.
Beeftink, H. H. 143
Behrndt, G. 2178, 2782
Beijerinck, W. 1902
Beilmann, A. P., and Brenner, L. G. 1967, 1968
Beirne, B. 41
Belcher, R. G. 4090
Bell, E. A. 570
Bell, E. R., Peck, E. C., and Krueger, N. T. 633
Bell, G. E. 2493, 2495, 4280
—, and Martin, P. E. 770, 2456, 4262
Bellamy, W. D. *see* Lawton, E. J.
Bellmann, H. 3402
—, and Fickler, H. H. 3277
Beltram, V. 282, 2154
Belyea, R. M., Fraser, D. A., and Rose, A. H. 2851
Béna, P. 988
Benassi, L. 522, 2345
Benk, E. 3503
Bennett, H., and Islip, H. T. 821
Bennett, R. G., and Binns, E. J. 2543
Benscheidt, C. 2518
Benson, A. W. B. 1256
Benson, J. L. 339
Benton, A. H. 1367
Benvenuti, B. 381
Benzian, B. 1137
Bérard, A. 2215
Berbee, J. G. *see* Beckman, C. H.
Beresford-Peirse, Sir H. 3508
Berezin, P. G. *see* Gugalo, I. A.
Berg, E. 2126, 3264
Berg, S. *see* Gralén, N.
Berg, W. 2581
Berge, J. van *see* Broese van Groenou, H.
Berger, J. 3047
Berger-Landefeldt, U., and Busch, D. 3700
Bergin, E. G. 1567, 2387
Bergold, G. 2751
Bergold, G. H. 471, 1377
—, and McGugan, B. M. 476
Bergsten, G. 353
Berkel, A. 4158
—, and Hus, S. 4216
Berliner, J. J., *et al.* 2531
Bernard, P. *see* Balansard, J.
Bernardini, F. 2619, 2871
Berner, E. Jr. 3605
Bernheim, F., Bunn, C., and Wilbur, K. M. 2399
Bernikov, V. V. 2161
Berry, D. W. 2927
Berthelsen 2061
Berwick, E. J. H. 1262
Besley, L. 3542, 4462
Besser, A. A., and Sinickiĭ, V. P. 3865
Bessey, E. A. 970
Bessey, G. E. 1603
Bethel, J. S. 2424
—, and Carter, R. M. 3383
Bhandari, P. R., Dhar, M. L., and Sharma, V. N. 3486
Bhargava, O. P. 2145
Bharucha, F. R. *see* Navalkar, B. S.
Bhasin, G. D. *see* Chatterjee, N. C.
— *see* Roonwal, M. L.
Bhat, R. V., and Guha, S. R. D. 1695, 3458
—, Guha, S. R. D., and Panda, S. P. 4373
—, and Jaspao, N. S. 1694
—, and Singh, M. M. 2594, 3457
—, and Virmani, K. C. 1693, 4372
Bhatia, B. M. 1653
— *see* Chatterjee, N. C.
Bhatnagar, M. S., and Nigam, P. C. 2617, 2618
Bhatt, V. V. *see* Patel, M. K.
Białobok, S., and Bugała, W. 2904
Bibbey, R. O. *see* Gammon, W. M.
Bick, I. R. C., Ewen, E. S., and Todd, A. R. 805
—, and Todd, A. R. 804, 806
Bickford, C. A. 3208, 4082
Bier, J. E. *see* Prebble, M. L.
Biggs, C. 4461
Bijhouwer, J. T. P. 2037
Billings, W D, and Morris, R. J. 2353
Binns, E. J. *see* Bennett, R. G.
Biraghi, A. 440, 3991
Bird, J. H. *see* Crawford, F. S.
Birkinshaw, J. H., Morgan, E. N., and Findlay, W. P. K. 4331
Bishop, R. L. *see* Morris, R. F.
Bisset, I. J. W. *see* Amos, G. L.
Bitancourt, A. A. *see* Jenkins, A. E.
Bjarnason, H. 2029, 2651
—, and Saemundsen, E. G. 2046
Björkqvist, K. J., and Jörgensen, L. 4212
Black, R. L. 422
Blackman, G. E. 1851
Blair, B. O. 336, 2173
Blais, J. R. 4031, 4351
Blakelock, R. A. 110, 1901
Blakey, G. G. 4308
Bland, D. E. 2433
—, Ho, G., and Cohen W. E. 640
Blew, J. O. 3407
Blewett, M. B., and Potzger, J. E. 1965
Blieck 1238
Blink, G. C. van der 365
Blockhuis, J. L. W., and Oosting, W. 3882
Blomquist, R. F. *see* Eickner, H. W.
Blomquist, U. O., and Widell, T. A. 792
Bloomer, L., and Galloway, J. A. 4125
Blume 885
Boarman, W. 4472
Boatman, D. J. *see* Marler, P.
Boback, A. W. 462
Bobkov, N. P., Šošin, N. A., and Cvetkov, B. S. 3917
Bock, E. 1561
Bodalski, T. 794
Bodenstein, G. 4020
Bodman, P., Mee, J., and Breadon, R. 3788
Boe, K. N. 1091
— *see* Roe, A. L.
Boer, S. de 1155
—, and Vogel, P. de 1165
Bogess, W. R. 1203, 2086
Bogorad, L. 1855
Bohmont, D. W. *see* Thornton, B. J.
Boker, R. 3016
—, and Lányi, J. 3329
Bolli, M. 69, 1344
Bolton, Lord 835, 2025
Bond, W. E. *see* Duerr, W. A.
Boomsma, C. D. 1927
Boon, D. A. 525
Booth, H. E., and Humphreys, F. R. 1607
Borell, A. E. 931
Borisov, I. I. *see* Černenko, A. A.
Bornebusch, C. H. 34, 4017
Borovoĭ, V. Ja. 1755
Børset, O. 3251, 4746
Borst, A. H. 1589
Borusiewicz, A., and Kapuściński, S. 45
Bossè, G. G. 4433
Bosshard, H. H. 3299
Botelho, E. Azevedo 3294, 4300
Böttcher, F. K. 3148
Böttcher, P. 662
Bottomley, W., and White, D. E. 807
Boudru, M. 3229
Boudy, P. 2749, 4446

Bouillenne, R., and Bouillenne-Walrand, M. 1156
Bouillenne-Walrand, M. *see* Bouillenne, R.
Bourgenot, L. 547
Bourne, R. 1452
Bouvarel, P. 1146
Boyce, J. S. Jr. *see* Hepting, G. H.
Boyd, J. D. 2453
Boyd Campbell, W. 2387
Boyko, H. 3713
Braathe, P. 1948
Bradley, C. E., and Haagen-Smit, A. J. 4428
Bradley, G. A. 1405, 2290, 3585, 4023
Bramble, W. C. 3812
—, and Worley, D. P. 406
— *see* Chisman, H. H.
Branco, A. C. de S. Castelo 1162
Brand, D. 1351
Brandt, C. W. 2448
—, and Thomas, B. R. 1540
Brantseg, A. 3206
Brasnett, N. V. 1457
Braun, E. L. 175
Brauns, F. E. 4204
— *see* Gottlieb, S.
Breadon, R. *see* Bodman, P.
Breakey, W. J. 331
Breazele, E. L., McGeorge, W. T., and Breazele, J. F. 936
Breazele, J. F. *see* Breazele, E. L.
Breger, I. A. 2435
—, and Whitehead, W. L. 2436
Brehme, K. 3233
Brenac 2092
Brenneman, D. L. 1416
Brenner, L. G. *see* Beilman, A. P.
Bretz, T. W. 432, 3109, 3110
— *see* Fowler, M. E.
Breviglieri, N. 3690
Brezinščak, M. 3448
Briasco, J. D., and Murray, J. 4427
Briggs, L. H., and Locker, R. H. 799
Brinkman, K. A. 1442
—, and Krajicek, J. E. 3220
Brison, F. R. *see* Armstrong, W. D.
Britton, D. M. 2777
Broadbent, L., and Hollings, M. 2753
Broadfoot, W. M. 1190, 1806
Brockway, G. E. 325
Brodie, A. 1226
Brodovič, T. M. 1120
Broese van Groenou, H., Rischen, H. W. L., and Berge, J. van 4316
Brofeldt, P. 3921
Bromley, W. S. 1250
Bron, H. 1787
Broniatowski, A. 4329
Brooks, M. G. 2830
Brooks, R. O. 259, 305
Brotero, F. A. 1515, 3380
—, and Andreoni, A. 4307
Brounstein, C. J. 4382
— *see* Pepper, J. M.
Browicz, K. 3669
Brown, E. P. *see* Flick, F. J.
Brown, G. S. 51
Brown, J. M. B. 1011, 2847
Brown, K. J., and McGovern, J. N. 2601
— *see* Martin, J. S.
Brown, L. R., and Eads, C.O. 1373
Brown, N. C. 834
Brown, T. A. 699
Brown, W. H. 769
Brown, W. J. 921
Browne, F. G. 2565, 3867, 4120
Browne, F. L. 4266
Browning, A. J. *see* Waldock, E. A.
Brozzetti, P. 828
Bruce, D. 1290, 1950
Brunel, A. 3598
Brunn, G. 1634
Brunson, F. D., and Jensen, C. E. 3245
— *see* Moessner, K. F.
Brunn, T. *see* Barton, D. H. R.
Bryan, J. 4342
Bryant, B. S. 2486
Bryant, L. H. 817
Bryant, M. P. *see* Lawton, E. J.
Brygider, W. 3590
Bublitz, W. 3281, 3282
Bublitz, W. J. 3338
Buchanan, T. S., Harvey, G. M., and Welch, D. S. 513
Buchholz, E. 575, 849, 1785, 2823, 3142, 3513
Buchholz, J. T. 1895
Buck, C. C. 1291
Buckland, D. C., and Marples, E. G. 3970
Buckley, T. A. 1316
Budowski, G. *see* Curran, H. M.
— *see* Gondelles Amengual, R.
Buell, M. F., and Cantlon, J. E. 178
Buerge, J. W. 1307
Bugała, W. 2785, 2835, 3626, 3627
— *see* Białobok, S.
Bugnon, F. *see* Bugnon, P.
Bugnon, P., and Bugnon, F. 2771
Bujnović, M. 3885
Bull, R. A. 3193
Buller, G. B. 3815
Bundy, O. 304
Bunn, C. *see* Bernheim, F.
Burchard 3071
Burgdorfer, H. 4054
Burger, F. W. *see* Houtzagers, G.
Burger, H. 156, 157, 225, 226
Burgers, T. F. 841, 3563
Burgos, J. C. 1114
Burgoyne, J. H., and Richardson, J. F. 787
Burič, J. 3176
Burkle, J. L., and Guttenberg, S. 4129
Burns, G. H. 560
Burns, P. Y. *see* McDermott, R. E.
Burschel, P., and Vité, P. 465
Burton, G. W. *see* Halls, L. K.
Burvill, G. H. 330
Busca Isusi, J. M. 1384
Busch, D. *see* Berger-Landefeldt, U.
Busnel, R.-G., Darpoux, H., and Ridé, M. 2265
Busse, J. 1459
Busse, von 3129
Butler, C. C. 399, 1307
Butler Orbeta, J. M. 1183
Butovitsch, V. 1657, 3434
Butterworth, E. G. 3267
Butterworth, W. 2387
Bykova, L. N. 138
Bylterud, A. *see* Vidme, T.
Byram, G. M., and Nelson, R. M. 1296, 3957
Byrnes, W. R. 1805
Cabral, I. de A. Roque 1234
Cafley, J. D. *see* Cockerill, J.
Caldart, F. 206, 4100
Calderwood, H. N. *see* Rogers, J.
Camefort, H. 67, 1861
Camandona, D. 851
Camp, W. H. 1872
Campbell, D. K. 468
Campbell, Sir G. I. 2986
Campbell, J. A. 1198
Campbell, J. R. *see* Gaiser, R. N.
Campbell, W. A., 512, 1412, 3190
Campbell, W. B. 672
Campbell, W. G., Frahn, J. L., Hirst, E. L., Packman, D. F., and Percival, E. G. V. 2447
— and Packman, D. F. 4298
— *see* Farmer, R. H.
Campo-Duplan, M. van 2772
Campredon, M. J. 3368
Camus, A. 109
Cancio Morenza, G. 2021, 3207
Candy, R. H. 1197
Cantiani, M. 2322
Cantillon, J. H. 3547
Cantlon, J. E. *see* Buell, M. F.
Capdevielle, J. M. 1986
Caprai, D. 3238
Capstick, E. S. *see* Waldock, E. A.
Carbonnier, C. 532, 2115, 3833
Cardoso, J. G. Alfaro 212
Carles, J. 1025
—, and Rivenq, F. 2763
Carlquist, C.-G. 2018
Carlson, C. W. *see* Olson, R. V.
Carlson, F. E. 876
Carolin, V. M. *see* Dowden, P. B.
Carpenter, R. D. 4314
Carr, D. R. *see* Smith, J. H.
Carr, G. 3889
Carranza, J. M. 1346, 3091
Carrera, C. J. M. 3973
Carroll, J. 1357
Carruthers, J. F. S., and Thomas, A. M. 4256
— *see* Knight, R. A. G.
Carson, H. L., and Stalker, H. D. 926
Carter, J. C. 437
Carter, R. M. *see* Bethel, J. S.
Cartwright, K. St. G. 3101
Carullo, F. 1826
Carvalho, A. Leitão de 4005
Carvalho, J. da Silva 2432, 4214
Castiglioni, J. A. *see* Ragonese, A.E.
— *see* Tortorelli, L.
Castro, C. 2074
Cavaco, A., and Normand, D. 1912, 4168
Cavazza, L. 2923
Cavill, G. W. K. *see* Badcock, C. G.
Ceballos, G. 1402
Cedillo, V. H. 3225
Čeljniker, Ju. L. 160
Čemekov, Ju. F. 3584
Centola, G., and Pancirolli, F. 4390
Cercós, A. P. 3490
Čerepanov, A. I., 3134
Černenko, A. I., and Borisov, I. I. 4400
Černjaeva, O. I. *see* Bardyšev, I. I.
Ceruti, A. 968, 1497
Cervera Ibañez, J. M. 4111
Čevedaev, A. A. 2094
Chadwick, L. C. *see* Diller, O. D.

Chaiken, L. E. 2136
— *see* Easley, L. T.
Chalk, L. 2422
Chamberlain, E. B., and Meyer, H. A. 2321
Champion, F. W. 1843
Champion, H. G. 4457
Chan, F. L. *see* Kurth, E. F.
Chandler, R. F. Jr. *see* Tarrant, R. F.
Chandrasekhar, T. R. *see* Narayanamurti, D.
Chaney, R. W. 1897
Chapman, A. G., and Lane, R. D. 1194
Chapman, E. 1983
Chapman, E. F. 1013
Chapman, H. H. 363, 834, 1204, 4121
—, Robertson, D., Hinds, H. V. 3824
Chapman, R. A. *see* Lynch, D. W.
Chappuis, J. B. 3835
Chardin, A. 2490
Charrier, G. 2804
Charvát, K. 491
Chase, W. W. 834
Chatelain, F. 548
Chattaway, M. M. 613, 614, 4175
Chatterjee, N. C., Bhasin, G. D., and Bhatia, B. M. 1371
—, and Chatterjee, P. N. 2563
— *see* Pant, G. D.
Chatterjee, P. N. *see* Chatterjee, N. C.
Chaturvedi, M. D. 2001, 2179, 2369, 2652
Chaudhri, I. I. 801, 1242
Chavasse, C. G. R. *see* Williams, R. W. M.
Chen, L. C. *see* Watanabe, M.
Chen, S. L. 937
Chenery, E. M. 23
Chenopoulos, D. 3494
Chevals, D. 2454
Chevalier, A. 88, 963, 965, 1882, 1903, 1918, 2798
Chiarelli de Gahan, A. 4037
Chiba, S. 2779
Chinte, F. O. 1430, 3743
Chisman, H. H., and Bramble, W. C. 1112
Chittenden, A. E., and Coomber, H. E. 1704
—, Coomber, H. E., and Corney, N. S. 1691
—, Coomber, H. E., and Morton, D. 2603
Chiu, S.-F. 810
Chorin, M. *see* Reichert, I.
Chorlton, R. W. 1301, 1313
Choudhury, K. C. R. 2653
Christensen, C. M., Anderson, R. L., Hudson, A. C., and Rudolf, P. O. 373
Christensen, G. N. 4185, 4186
—, and Williams, E. J. 4184
Christiansen, H. 3612
Christiansen, R. 771
Christisen, D. M. 2050
Christjansen, S. L. 14
Christodoulopoulos, A. 1796, 2095
Christopher, E. P. *see* Shutak, V. G.
Chrystal, R. N. 4021
— *see* Bayne, A.
Chudziński, Z. *see* Perkitny, T.
Church, J. W. *see* McIntosh, W. G.
Church, T. W., Jr. *see* Curry, J. R.
Čikov, Ja. I., and Piir, A. I. 3891
Cittadini, J. C. 2164
Cividini, R. 1557
Clapham, A. R., Tutin, T. G., and Warburg, E. F. 2794
Clapp, W. F. 3430
Clark, L. R. 914
Clark, S. F. 3259
—, and Hebb, E. A. 3051
Clarke, L. N. 4301
Clason, M. S. 2085
Clauser, F. 3209
Claverie, P.-A. 80
Clear, T. 1107
Clements, R. W., and Snow, A. G., Jr. 3013
Clermont, L. P., and Schwartz, H. 3331
Cline, G. M., Dolley, H. O., and Osborn, R. C. 4304
Clower, D. *see* Matthysse, J. G.
Clowes, F. A. L. 1033
Coaton, W. G. H. 915
Cockerill, J., and Cafley, J. D. 2069
Cohen, S. I., *et al.* 376
Cohen, W. E. 2445
— *see* Bland, D. E.
— *see* Koeppen, A. von
— *see* Stewart, C. M.
Colle, T. S. 1973, 4093
Cointat, M. 205, 2000
Coit, J. E. 341
Čokl, M. 1410
Cokley, K. 3435
Coldwell, B. B., and Delong, W. A. 24, 3597
Cole, J. R. 3121
Colette, L. 2330, 4107, 4126
Čolić, D. 3524
Colleary, M. J. 2537
Collier, F. S. 4437
Collier, R. D. 2201
Collins, T. E. 1267
Colman, E. A. *see* Rowe, P. B.
Colquhoun, M. K. 1354
Colson, J. H. *see* Patterson, A. E.
Colwell, R. N. 4116
— *et al.* 2352
Condon, R. W. 514
Conklin, D. B. *see* Bacon, L. R.
Connelly, H. H. 688
Conrard, J. *see* Allouard, P.
Conway, E. M., and Schnell, R. L. 3350
Cook, D. B. 215, 1460, 3842
Cook, H. K. 3430
Cook, W. R. *see* Keilen, J. J.
Cooke, G. B. *see* Ryan, V. A.
Cooke, R. G., Dowd, H., and Webb, L. J. 3599
Coomber, H. E. 4374
— *see* Chittenden, A. E.
Cooper, G. R. 3575
—, and Aikman, J. M. 3816
Cooper, K. L. 3452
— *see* Mack, J. J.
Cooper, R. W. 153, 2838
Copeland, O. L. 3191
Corbet, H. A. 2143
Corney, N. S. *see* Chittenden, A. E.
Corns, W. G., *et al.* 331
Cosens, R. D. *see* Gordon, D. T.
Cosma, D. 556
Cossitt, F. M. 2065
Costa, M. V. L. Firmino da 2590, 2591
Costantino, I. N. 303, 1012
Costing, W. *see* Blokhuis, J. L. W.
Cotterell, Sir R. 1196
Cotton, D. C. 4134
Coudreau, J. 2394
Coulon, J.-P. 4268
Coulter, L. L. 334, 399, 1307, 3963
— *see* Mullison, W. R.
Coupland, R. T. 331, 1307
Courtemanche, A. 1989
Cousens, J. E. 1066
Couturier, A., and Hurpin, B. 49
Cowan, J. M. *see* Hayes, S. F.
Cox, H. A. 3401
Cox, M. B. *see* Elwell, H. M.
Cox, R. S. 2070
Cozzo, D. 1491, 3295, 3301
—, and Cristiani, L. Q. 618
Craib, W. G., and Kerr, A. F. G. 2796
Craig, H. A. 332
Cram, H. W. 2926
Crawford, F. S., and Bird, J. H. 3022
Creech, J. L., and Dowdle, R. F. 2930
Creighton, J. W. 2494
Crestin, F. 2509
Cristiani, L. Q. *see* Cozzo, D.
Crivellari, D. 1240
Crockett, G. 3377
Cromer, D. A. N. 1766
Crooke, M. 2297
Crossley, D. I., and Skov, L. 2056
Crowther, E. M. 1141
Cruzado, H. J. *see* Muzik, T. J.
Cuatrecasas, J. 115, 3638
Cummings, L. J. 3514
—, Haibach, D. J., and Wise, H. F. 856
Cummins, G. B. *see* Hepting, G. H.
Cunningham, R. N. 1765
Curl, E. A., Stessel, G. J., and Zuckerman, B. M. 3106
Curran, H. M., Veillon, J. P., and Budowski, G. 3519
Curry, J. R., and Church, T. W., Jr. 3944
Curtis, J. T., and McIntosh, R. P. 1074
Cutten, E. Y. 1205
Cvetkov, B. S. *see* Bobkov, N. P.
Cymek, A. A. 1972
Czarnowski, M. 2766
Czereyski, K. 3041
— *see* Mączewski-Rowiński, B.

Dadswell, H. E., and Ingle, H. D. 605
—, Fitzgerald, J. S., and Tamblyn, N. 4258
— *see* Amos, G. L.
— *see* Wardrop, A. B.
Dadykin, V. P., and Grigorjeva, V. G. 3604
Daglish, C. 3488
Dahms, K. *see* Reichenstein, E.
Dakov, M. P. 227
Dalin, D., and Hedbäck, T. J. 1718
Dallimore, W., and Wood, R. F. 1228
Dalton, L. K., Fitzgerald, J. S., and Hatt, H. H. 2551
—, Fitzgerald, J. S., Tack, G. W., and Tamblyn, N. 1564
Daly, E. G. 2005

Dana, S. T. 834
Danfeljd, P. 3011
Daniel, H. A. *see* Elwell, H. M.
Danilina, A. F. *see* Sjavcillo, S. V.
Danilov, M. D. 3056
Dansereau, P. 162
Dantin-Gallego, J., Armayor, A. F., and Riesco, J. 4228
Darby, G. D. *see* Beard, J. S.
Darling, F. F. 3591
Darpoux, H. 2708
— *see* Busnel, R.-G.
Darrow, R. A. 1307
Das, N. R. *see* Narayanamurti, D.
Das, P. K. *see* Saikia, B.
Das, S. B. 803
Dasen, E. 2972
Daskaloff, I. *see* Winter, H.
Dass, B. C. 2107
Datta, R. M. *see* Mitra, J. N.
Datta, S. K. 3515
Daviault, L. 2296, 2755, 4034
David, R. 2055
Davidson, A. G. 2255, 3975
Davidson, R. W. 1392
Dawson, R. C. 4313
Day, M. W. 260, 1307
—, Hamner, C. L., and Panshin, A. J. 3964
Day, W. R. 1282, 3946, 3947
Deacock, R. J. *see* Prime, C. T.
Dean, A. R. *see* Pratt, G. H.
Deb Goswami, M. N. *see* Kehar, N. D.
DeBaun, R. M., Kudzin, S. F., and Schubert, W. J. 747
—, and Nord, F. F. 1531, 4408
— *see* Kudzin, S. F.
Decker, J. P. 2813
DeGrace, L. A., Robinson, E. W., and Smith, J. H. G. 3869
DeGrace, R. F. 4299
Deighton, R. C. 3522
Deitschman, G. H. *see* Limstrom, G. A.
Dekatov, N. E. 274
Delevoy, G. 1896, 2039, 2040, 2041, 4099
Delong, W. A. *see* Coldwell, B. B.
Dementjev, N. N. 1428
Demetriades, S. D. 1343, 1353
Demjanovskiĭ, S. Ja., Nefedova, V. A., and Kondratjeva, V. K. 1246
DeMoisy, R. G. 2195, 3807
Denisov, A. K. 189
Denk 237
Denoël, A. 2634
DenUyl, D. 1087, 2114, 3818
Denyer, W. B. G. 3989
DePan, R. T. 3470
DeRice, H. A. *see* Rambo, W. H.
Derjabin, D. I. 312, 2052, 2919
Desch, H. E. 3278
Dhar, M. L. *see* Bhandari, P. R.
Dick, M. E. 661
Diener, H. 566
Dieterich, V. 2359
Dietrich, H. *see* Freudenberg, K.
Dijkman, M. J. 2075
Diker, M. 831
—, and Savaş, K. 832
Diller, O. D., and Chadwick, L. C. 3010
Dimbleby, G. W. 898
Dimitri, M. J. 995
Dinther, J. B. M. van 467
Dirks, C. O. *see* Dowden, P. B.
Dixmier, G., and Iablokoff, A. 1644
Dobbs, C. G. 1438
Dobrovoljskiĭ, B. V. 479
Dodge, B. O. 1651
Doering, H. 2439
Doignon, P. 384, 3560
Dolgopolov, N. P., and Petrov, P. E. 3893
Dolley, H. O. *see* Cline, G. M.
Doman, L. S. *see* Knight, R. A.
Domański, S. 3978
Döme, K. *see* Fehér, D.
Dominik, J. 4053
Dominik, T. 1031, 1032, 2827, 2828
Donis, C., and Maudoux, E. 2002
— *see* Mayné, R.
Doolittle, F. B. 4324
Doorenbos, J. 1893
Doran, C. W. *see* Hill, A. C. Jr.
Doran, W. L. 3789
Dorman, K. W. 3614
— *see* Little, E. L.
Dosen, R. C., Peterson, S. F., and Pronin, D. T. 2848
Douda, V. 3030, 3875
Dougherty, W. K. *see* Keilen, J. J.
Douglas, H. A. 3551
Douglas, W. 1559, 2484
Dover, A. 454
Dow, A. W. 149
Dow, N. F. *see* Hubka, R. E.
Dowd, H. *see* Cooke, R. G.
Dowden, P. B., Carolin, V. M., and Dirks, C. O. 470
Dowdle, R. F. *see* Creech, J. L.
Downs, A. A. 1743
Doyle, J. A. 3062
Drake, C. E. 3359
Drar, M. 1187
— *see* Täckholm, V.
Drašković, D. 3809
Drees, E. Meijer 163, 298, 1926, 1962, 2853
Drift, J. van der 903
Drummond, J. W. R. *see* Hanchet, W. H. D.
Dubjanszkij [Dubjanskiĭ], V. A. 2102
Du Bois, H. *see* Laudelot, H.
Dubois 480
Dubois, L. 2643
Duchaufour, P. 1818
Ducke, A. 1907, 3661
Duda, E. J., and Nash, R. W. 3736
Duerr, W. A., and Bond, W. E. 3253
Duff, G. 1426
Duff, G. H. 2912
Duff, M. G. 3394
Duffield, J. W. *see* Righter, F. I.
Dugelay, A. 2181
Dumbleton, L. J. 3156
Duncan, D. B., and Martin, P. J. 1751
Duncan, W. H. 133
Dunlap, M. E. 702
Durand, F. M. *see* McClure, F. A.
Durand, J. 2722
Durham, O. C. 1723
Durinov, S. A. 2300
Duval, G. 753
Duvigneaud, P. 1001, 1005, 1909
Dwyer, W. W., Jr. 425
Dyer, R. A. 3648
E., R. S. DE 2625
Eades, H. W. 750
Eads, C. O. *see* Brown, L. R.
Easley, L. T., and Chaiken, L. E. 1954
Eaton, C. B. *see* Yuill, J. S.
Ecchu, K. *see* Inouye, Y.
Eckert, K. H. 3213
Edén, J. 4135
Edgerley, L. F. *see* Allan, W.
Edgren, V., and Nylinder, P. 520
Edlin, H. L. 976
Edminster, F. C. 1846
Edwards, D. C. 3522
Edwards, M. V., and Holmes, G. D. 1140
Eeckhout, L. E. 1488, 1489, 1495, 1613, 2404, 3404
Egler, F. E. 400, 3073, 3717, 3965
Egner, K. 764
Ehrenberg, P. 19
Ehrhardt, F., and Klöck, W. 89
Ehwald 1785
Eickner, H. W., and Blomquist, R. F. 1565
Eiklid, O. 3234
Einspahr, D., and McComb, A. L. 2333
Eisenmann, E. 1674
Èitingen, G. R., Klimov, V. I., and Krotova, N. G. 1222
Eklund, B. 528, 2335
Eklund, R. 2214, 3045, 3928
Elder, W. C. 1307
Elia, E. d' 851
Eliason, E. J. 261
Ellwanger, L. 4312
Ellwood, E. L. 4288
—, Gottstein, J. W., and Wright, G. W. 767
—, Lansell, C. V., and Gottstein, J. W. 3447
Elmendorf, A. 4391
Elmlund, A. 2217
Elton, E. T. G. 1359, 1391
Elwell, H. 399
Elwell, H. M. 1307, 3962
—, Daniel, H. A., and Cox, M. B. 1224
Em, H. 3710
Emberger, L. 3644, 3714
—, Mangenot, G., and Miège, J. 172, 173
Emerson, A. E. 1838
Emilsson, E. B. *see* Ögland, N. J.
Emrović, B. 1418
— *see* Horvat, I.
Enčev, E. *see* Stojanov, V.
Ende, G. van den 4001
Engle, L. G. 311, 1307
—, and Smith, N. F. 306
Englund, S. 448
Entrican, A. R., revised by Reid, J. S. 2389
Enzenberger, W. *see* Köhler, R.
Erahtin, D. D. 3906
Erdem, R. 4041
Erdtman, H. 3341
—, Frank, A., and Lindstedt, G. 644
Ergüleç 2713
Eriksson, R. 3040
Ermich, K. 3561
Ernesto Alonzo, A. 3847
Ernst, A. 1678
Erteld, W. 2898
Eschment 1127

Espenas, L. D. 4354
Espil, L. *see* Savard, J.
Etelälahti, A. E. 1352
Etter, H. 534, 3239
Evans, G. O. 904
Evans, H. R. 3472
Evans, J. D. D. 3830
Evans, T., and McClay, T. A. 4089
Evans, W. D. D. 2100
Evenden, J. C. *see* Wellner, C. A.
Everts, A. B. 1302
Ewen, E. S. *see* Bick, I. R. C.
Ewers, J. 3021
Exell, A. W., and Mendonça, F. A. 1883
Eyre, F. H., and Longwood, F. R. 307

F., G. 3915
Fabijanowski, J. 190
Fabricius, W. 2880
Fager, E. W. 1851
Fahnestock, G. R. 1295
Fairbairns, A. W. 1427, 2524
Farber, E. 1708, 3473
Farmer, R. H., and Campbell, W.G. 774
Farrer, R. P. 256
Fassi, B. 415
Faurel, L., and Lafitte, R. 1019
Fechner, G. H. 3376
Federico, S. 2156
Feeley, H. W. *see* Kulp, J. L.
Fehér, D., Döme, K., and Sass, S. 2725
—, and Szabó, E. 2720
Feierabend, P. 1215
Fensom 2770
Fenton, R. H. 729, 2315
Ferguson, J. H. A. 216, 296, 500, 3196
Fernandes, C. Taveira 428, 1079, 2258, 3981
—, and Guerreiro, M. Gomes 1078
Fernandes, H. *see* Gomes, P.
Fernández de Córdoba, L. C., and Ortuño Medina, F. 1985
Fernández Valiela, M. V. 2273
Ferrand, M., and Ollagnier, M. 340
Ferreirinha, M. P. *see* Seabra, L. de
Ferrière, C. 3185
Ferris, C. 2235
Fessel, F. 765, 1571, 4263
Fichter, E. *see* Mohler, L. L.
Fickler, H.-H. 4384
— *see* Bellmann, H.
Field, J. 3430
Filho, A. de Mattos 2407
Filzer, P. 3240
Finch, T. L. 545
Findlay, W. P. K. 1648, 3403
—, and Vernon, J. W. 3426
— *see* Birkinshaw, J. H.
Finholt, R. W. 1621
Finn, R. F. 3813
— *see* Merz, R. W.
Firbas, F. 3702
Firestone, J. T. 2587
Fischer, F. 219, 3793
Fischer, G. W. *see* Shaw, C. G.
Fischer, H. O. L., and MacDonald, D. L. 1533
Fisher, C. E. 1307, 3078
—, Young, D. W., and Marion, P. T. 3966
— *see* Young, D. W.
Fisher, C. W. 1307
Fisher, R. C. 1397
—, and Harris, E. C. 1658
Fitschen, J. 94
Fitze, K. 4030
Fitzgerald, J. S. *see* Dadswell, H. E.
— *see* Dalton, L. K.
Flagg, C. V. *see* Geluwe, J. van
Flensborg, C. E. 2028
Fletcher, F. W. 1407
Fletcher, M. I. 1015
Flick, F. J., and Brown, E. P. 3553
Florovskiĭ, A. M. 2965
Flory, E. L. *et al.* 337
Flügel, H. 4009
Fobes, E. W. 728, 3877, 3912, 3913, 3918
— *see* Sweet, C. V.
Foggie, A. 3522
Foiles, M. W. 276
Foley, J. C. 3060
Foley, T. A. 1047
Fons, W. L. 3314
Fonseca, J. Pinto da 506
Foot, A. S., and Lovett, J. F. 4011
Forbes, R. S. *see* Webb, F. E.
Ford, J. H. *see* West, T. F.
Fors y Reyes, A. J. 3724
Forsberg, P. *see* Thunell, B.
Forsberg, S. 2010
Fortunatov, N. I. 2978
Foster, A. T. *see* Foster, R. E.
Foster, D. H., and Wardrop, A. B. 2443
— *see* Kurth, E. E.
— *see* Stewart, C. M.
Foster, H. R. 1378
Foster, R. E., and Foster, A. T. 3977
Fouarge, J. 591
Fourchy, P. 1979
Foury, P. 2867
Fowells, H. A., and Schubert, G. H. 185, 1167
Fowler, M. E. 3987
—, and Bretz, T. W. 1336
Fox, H. W. *see* Walters, C. S.
Fraga, M. V. G. 3554, 3639
Frahn, J. L. *see* Campbell, W. G.
Francis, W. D. 990
Frančišković, S. 4096
Franck, J. 1851
Francke-Grosmann, H. 1390
Franco, J. M. A. P. do Amaral 3739
Franco, J. do Amaral 105, 994
François, T. 1745
Frank, A. *see* Erdtman, H.
Frank, B. 834
— , and Netboy, A. 38
Franksson, R. 4272
Fransson, P. 3763
Franz, H. 32
Franz, J. M. 4033
Fraselle, J. V. 3983
Fraser, A. R. 3218
Fraser, D. A. 3701
— *see* Belyea, R. M.
Fraser, D. G. *see* Beall, H. W.
Fraser, J. W. 154
Frauendorfer, S. 4473
Freeburn, C. C. 1844
Frenzel, H. *see* Kisser, J.
Freudenberg, K., Dietrich, H., and Siebert, W. 2434
—, and Wilke, G. 3333
Frey, D. G. 1053
Friedrich, C. A. 908, 1293
Fries, N. 1858, 2762
Friese, W. 3594
Friesen, H. A. 399
Frison, E. 2592
Fritz, C. W. 2387
Fritz, E. 1077, 2279, 3127
Froede, O. *see* Sandermann, W.
Fröhlich 2198
Fröhlich, M. 368
Fronius, K. 4237
Frost, F. 3007, 3008
Fryjordet, T. 2197, 3255
Fuchs 1785
Fujibayashi, M., Honda, M., and Yamawaki, S. 3039
—, Kato, S., Maruyama, M., and Kamiizaka, M. 3038
Fujimoto, G., and Sherman, G. D. 3592
Fujino, K., and Hirota, T. 3386
—, and Horino, T. 3385
Fukarek, P. 1020
Fuller, H. J. 2641

Gäbler, H. 1380, 1381, 1785, 3168
Gaffron, H. 1851
Gaines, E. M. 2133, 2990
Gaiser, R. N. 1433, 3215
—, and Campbell, J. R. 1038
—, and Merz, R. W. 1434
Galjpern, G. D. 147
Galloway, J. A. *see* Bloomer, L.
Galoux, A. 1285, 1803, 4436
Gambrell, F. L., and Heit, C. H. 3786
Gammon, W. M., and Bibbey, R. O. 407
García, J. G. 1988
García, J. J. M. 628
— *see* Bazzalo, B. A.
— *see* García, R. R.
García, R. R. 3308
—, and García, J. J. M. 3304
Garden, J., and Johnson, L. A. S. 3647
Gardner, C. A. 4162
Gardner, J. A. F. *see* MacLean, H.
— *see* Scott, D. S.
Garland, E. A. 2149
Garland, H. 1474, 1611
Garman, E. H. 151
Garrard, C. W. 2350
Garrett, S. D. 1330
Garrison, G. A., and Rummel, R. S. 2170
Gassaway, J. E. 1307
Gaumann 2540
Gäumann, E. 652
—, and Jaag, O. 3569
Gautheret, R. J. 1877
Gavrilov, B. I. 2883
Gavrilov, K. A. 26
Gavrilović, S. 1130, 1169
Gecow, R. 3044, 3740
Gedney, D. R. *see* McConkey, T. W.
Geier, P. *see* Baggiolini, M.
Geiger, R. 10, 885, 1283
Geise, W. 4010
Gekeler, M. *see* Kurth, E. F.
Geljfgat, M. Z. 3482
Gellért, E. *see* Schlittler, E.
Geluwe, J. van, Flagg, C. V., Beatty, R. H., and Lacko, E. 3079
George, J. *see* Narayanamurti, D.
Georgopulos, A. 844
Gérard, P. 833

Gerbranda, G., and Ommeren, G. van 874
Gerneck, R. 3183
Gerry, E. 1484, 4156
Gertsch, M. E., Stamper, E. R., and Ryker, T. C. 408
Gessel, S. P., Walker, R. B., and Haddock, P. G. 3058
Gevorkiantz, S. R. 4088
—, and Olsen, L. P. 2320
Ghani, Q. 1102, 2723
Giacobbe, A. 1938, 2817, 2857, 3674
Gibson, W. N. 2649
Giddings, J. L. 1439
Giertz, H. W. *see* Algar, W. H.
Gifford, E. M., Jr. 947, 948, 1862
Gilbert, F. A. 2222
Gill, L. S., Leaphart, C. D., and Andrews, S. R. 3988
Gillen, E. 3726
Gilles, F. 4328
Gillett, C. A. 834
Gilliland, H. B. 2805, 3716
Gilmour, J. D. 2673
Gimon, P. 1269
Ginet, J. 2708
Giordano, G. 2128, 3305
Girgidov, D. Ja. 3122
Gisborne, H. T. 834
Githens, T. S. 800
Giuliani, R., and Savi, L. 2158
Gläser, H. 885, 3028
Glass, J. B. 701
Glennie, D. W., and Schwartz, H. 3463
Glotova, T. V. 28
Glover, Sir H. 1769, 4460
Glover, P. E. 1037
Głowacki, J. 3132
Gluckiĭ, I. I. 2082
Godden, F. W. 2228
Godnev, E. D. 2832
Godwin, H., and Tallantire, P. A. 2854
Goes, E. da S. Reis 4039
Goetz 1870
Goggans, J. F. 4094
Göhre, K. 323
Goljdblatt, B. A. *see* Netušil, A. V.
Goljdin, I. L. 2882
Golubinskiĭ, S. S. 1957
Gomes, P., and Fernandes, H. 4151
Gomes, R. C. V. Monteiro 1016, 1891, 1992
Goms, R. H. *see* Howells, T. A.
Gončar, A. I. 299
Gondelles Amengual, R., and Budowski, G. 848
Gonzalez Vazquez, E. 2708
Goo, M. 1049
Goodell, B. C. 3577
Goor, C. P. van 1809
—, Oosten Slingeland, J. F. van, and Veen, B. 3844
Gorbačev, V. M. 932
Gorczyński, T. 3296
Gordon, D. T., and Cosens, R. D. 3733
Gordon, W. A., and Hamboulas, K. 1188
Gorham, E. *see* Mayer, A. M.
Göritz, H. 2155
Görnitz, K., and Harnack, W. 3089
Gorohov, B. A. 2908
Gorovoĭ, I. L. 2937
Gorrie, R. M. 862, 881, 1299
Gosling, A. H. 2686
Goss, W. C. 4389
Gösswald, K. 924, 3140, 4014
Gossweiler, J. 980, 981
Göthner, K. H., Haagen, T., and Hansson, A. 3222
Gotō, R., and Kōzai, Y. 669
Gottlieb, S., and Brauns, F. E. 4217
Gottstein, J. W. 3471
— *see* Ellwood, E. L.
Goulão, C. de Assis 1987
Gould, E. M., Jr. *see* Barraclough, S.
Gourlay, E. S. 1400
Gowda, D. R. *see* Ramaswami, M. N.
Gowda, M. 1914
Gračev, A. P. 1080
Graf, S. H. 1501
Graham, K. 2203
—, and Shepherd, R. 2294
Graham, P. H. 773, 1552, 2519, 3370
Gralén, N., and Berg, S. 2437
Gram, K. *see* Möller, C. M.
Gran, G. 2452
Grandjean, A. J. 4109
Granick, S. 1851
Graniczny, S. 2998
Grano, C. X. 2048, 3960
Grant, T. J. *see* Wellman, F. L.
Grantham, J. B. 3374
Granum, H. 719, 3397
Granvik, B.-A. *see* Kantola, M.
Grasso, V. 436
Gratzl, A. 763
Graves, A. H. 1003
Grazdov, B. V. 4433
Greaves, C. 795, 1642, 2387
Greeley, W. B. 834, 1746
Green, G. W., and Sullivan, C. R. 478
— *see* Wellington, W. G.
Gregory, P. H., and Waller, S. 3990
Greguss, P. 2400
—, and Varga, I. 603
Grehn, J. 3625
Griffioen, K. 745, 4326
Griffith, A. L. 906, 1138, 1424, 1824, 2111, 2131, 2168
—, *et al.* 2044
Griffith, B. G. *see* Allen, G. S.
Griffiths, C. 823
Grigorjeva, V. G. *see* Dadykin, V.P.
Grio, M. 3166
Gripenberg, J. 3342
Grochowski, W. 3866
Gröhn, W. 2814
Grönwall, J. S. 918
Groschke, F. 502, 3175
Grosenbaugh, L. R. 3197, 4076
Grosjean, J. 2274
Grossbard, E. 1321
Grundon, M. F. *see* King, F. E.
Gruschow, G. F. 3070
Gruzdev, V. A. *see* Vertebnyĭ, P. I.
Guenther, K. W. 1021
Guernsey, F. W. 716, 768
Guerreiro, M. Gomes 182, 957, 1874, 1931, 2259, 3621
—, and Ribeiro, J. Pinto 1905, 3654
— *see* Fernandes, C. Taveira
Gugalo, I. A., and Berezin, P. G. 3890
Guha, S. R. D. *see* Bhat, R. V.
— *see* Singh, C.
Guichard, X. 1085
Guichon, A. 573
Guillebaud, W. H. 2090
Guinaudeau, J. 3776
Guinier, P. 119, 202, 1916, 2397, 2644, 2708, 4160, 4439
—, and Pourtet, J. 998
Gulati, K. C. *see* Verghese, J.
Gulisašvili, V. Z. 3670
Gunnason, J. 4363
Günthart, E. 504
Günther 1785
Gupta, A. C. *see* Puri, G. S.
Gupta, J. N. S. 1319
Gupta, R. S. 1023
Gurevič, E. L. *see* Menjšikov, G. P.
Gurgel, J. T. A. *see* Malavolta, E.
Gusev, V. I. *see* Rimskiĭ-Korsakov, M. N.
Gustafsson, A. M. *see* Algar, W. H.
Gustafsson, C., Sarkanen, K., Kahila, S., and Niskasaari, E. 642
—, Sundman, J., Pettersson, S., and Lindh, T. 2446
Gutierrez Jarquin, T., and Martinez Garcia, J. 2878
Gutschick, V. 890
Guttenberg, S. 2846
—, and Putnam, J. A. 3254
— *see* Burkle, J. L.
Györfi, J. 3137, 3138, 3180
Gysel, L. W. *see* Arend, J. L.
Gyurko, P. 9

H., W. Q. 3414
Haagen, T. *see* Göthner, K. H.
Haagen-Smit, A. J., Wang, T. H., and Mirov, N. T. 4424
— *see* Bradley, C. E.
Haan, J. H. de 1835
Haas, H., Battenberg, E., and Teves, D. 4392
Haber, A. 3149
Habib Khan, M. *see* Riaz, A. G.
Hablützel,H. 3829
Hacskaylo, E. 2825
Hadders, G. 3794
Haddock, P. G. *see* Gessel, S. P.
Hadley, B. L. 4046
Hadlington, P. 1362, 2760, 3439, 4057
Hagberg, E. 2364
— *see* Näslund, M.
Hageman, R. H., and Pagan, C. 1159
— *see* Plank, H. K.
Häger, B. O. 4318
Haggett, G. 42
Hägglund, E. 4199
—, and Webjörn, B. 2607
Hagglund, S.-E. 3459
Häggström, B. 1808
Haglund, A. 2623
Hahr, G. 2280
Haibach, D. J. *see* Cummings, L. J.
Haider, A. 4118
Hakim, K. A. 1219
Hakkarainen, A. 3910
Hale, J. D. 2211, 2387
Haliburton, W. 489
Hall, B. A. 3609
Hall, E. *see* Lawton, E. J.
Hall, J. W. 2405
Hall, N. 2036
Hall, R. L. 2237
Halliday, D. J. 1851
Hallin, W. E. 1456

Hallonquist, E. G. 1712
Halls, L. K., and Burton, G. W. 3077
Hallström, G. 2194
Halopainen, V. 580
Hambleton, E. J., and McClure, F. A. 4056
Hamboulas, K. *see* Gordon, W. A.
Hamilton, J. R., and Jackson, W. R. 2058
Hamilton, R. D. 1307
Hammer, C. L. *see* Day, M. W.
Hammond, F. R. *see* Peterson, L. O. T.
Hammond, G. H. 4055
Han, U Thein, 2655
Hanchet, W. H. D., and Drummond, J. W. R. 2236
Handa, R. 3541
Handley, W. R. C. 3570
Hanna, A. D., Heatherington, W., and Judenko, E. 3146
Hansen, H. L. 333, 399
Hansen, L. J. 2527
Hanson, H. C. 1990
Hanson, H. S. 1356
Hansson, A. *see* Göthner, K. H.
Hara, S. *see* Moroe, T.
Harad, S. D. *see* Malevskaja, S. S.
Harada, H., and Kishima, T. 3298
—, Kishima, T., and Kadita, S. 3297
Hardy, F. 2736
Hardy, J. E. *see* West, T. F.
Harkom, J. F. 2387
Harnack, W. *see* Görnitz, K.
Harris, E. C. *see* Fisher, R. C.
Harris, P. 2461
Harrison, J. L. 2216
Harrison, S. G. 826, 1894, 3012
Harrow, K. M. 735, 1624, 1629, 1635, 1636, 1637, 2538
Härry, H. 866
Hart, C. E. 1779, 4480
Hartigan, D., and Truman, R. 3083
Hartigan, D. T. 4058
Hartl, F. 1598
Hartley, C. W. S. 1317
Hartley, G. S. 3144
Harve, P. 4481
Harvey, G. M. *see* Buchanan, T. S.
Harvin, R. L., Hills, G. B. Jr., Rothrock, C. W., Jr., and Nolan, W. J. 2598
Hasel, K. 1771
Hassenkamp, W. 1100
Hasuo, Y. 1253
Hatch, A. B. 414
Hatiya, K. *see* Suzuki, T.
Hatt, H. H. *see* Dalton, L. K.
Hattori, S., and Shiroya, T. 2768
Haugberg, M. 3232
Hauman, L. 1915
Haupt, H. F. 2745
Hausendorff, E. 187, 199
Hawkes, A. D. 1898
Hayashi, Y. 1018
Hayes, S. F., Keenan, J., and Cowman, J. M. 108
Hayward, A. M. *see* Wright, R. H.
Heatherington, W. *see* Hanna, A. D.
Hebb, E. A. *see* Clark, S. F.
Hebbelynck, M.-F. *see* Léonard, J.
Hebblethwaite, C. H. C. 346
Heck, G. E. 703
Hedbäck, T. J. *see* Dalin, D.
Hedberg, O. 1071
Heebink, B. G. 1572
— *see* Mohaupt, A. A.
Hegardt, S. B. 565
Hegel, D. von 316
Heger, A. 378, 1195, 1200
Heiberg, H. H. 546
Heidenreich, E. 3147
Heikinheimo, O. 2698
Heilmann, A. 222
Heim, R. 92, 1070
Heimburger, C. 2775, 2776
Heimerdinger, G. 3602
Heinselmann, M. L. 3839
— *see* Stoeckeler, J. H.
Heintzlemann, B. F. 3517
Heiskanen, V. 523
Heit, C. H. *see* Gambrell, F. L.
Hellén, E. 2707
Heller, R. C., Bean, J. L., and Marsh, J. W. 3162
Hemmi, T. *see* Akai, S.
Henderson, B. W. 723
Hendrix, T. M. *see* Rowe, P. B.
Hendry, R., and Scott, A. W. 1666
Hengst 198
Henker, G. A., and Huston, M. J. 811
Hennig, R. 629, 1110
Henriksen, E. K. 1547
Henriksen, H. A. 1417, 3834, 3837, 3838
Henry, B. W. *see* Maki, T. E.
Henson, W. R. 3164, 3941
—, and Shepherd, R. F. 4024
Hepting, G. H., and Cummings, G. B. 3118, 3995
—, Toole, E. R., and Boyce, J. S., Jr. 3985
Heqvist, K.-J. 482, 2304
Herbignat, A. 3550
Hergert, H. L., and Kurth, E. F. 4409
Hering, E. M. 967, 2752
Hermann, S. 3754
Hermelin, P. R. *see* Williams, J. R.
Herold, W. 187
Herrero, J. 2951
Herrmann, S. 1163
Hershey, J. W. 1742
Hertzler, R. A. 582
Heske, F. 864, 3511
Hesmer, H. 118, 198, 1100
Hespeler, R. 1659
Hess, R. W. 3454
Heuser, E., and Jörgensen, L. 2444
Heuson, R. 291
Hewetson, C. E. 1978
Hewitt, E. J. 1851
Heyden, D. 319, 1255
Hibino, K. *see* Akai, S.
Hickin, N. E. 3433
Hickson, H. E. 3413
Hide, R. H. 554, 2349
Hierholzer, O. 498
Higgins, H. G. *see* Watson, A. J.
Hilbert, F. L. 789, 797
Hildebrand, F. H. 103, 1888, 1889, 1890, 3634, 3635
Hilditch, T. P., Meara, M. L., and Patel, C. B. 820
Hiley, W. E. 2366, 2985
Hilf, H. H. 1100
Hilf, R. B. 1100
Hill, A. C., Jr., and Doran, C. W. 338
Hill, L. E. 3347
Hille Ris Lambers, D. 916
Hilli, A. 397
Hillis, W. E. 3501
Hills, G. B., Jr. *see* Harvin, R. L.
Hills, K. L., and Rodwell, C. N. 4416
Hiltscher, R. *see* Thunell, B.
Hinds, H. V. 3824
Hinton, C. L. 1536
Hirai, S. 553, 630, 1509, 3303, 3344, 3384
—, and Kitahara, K. 3307
Hirata, T., and Hotta, Y. 3057
Hirota, T. *see* Fujino, K.
Hirst, E. L. 1738
—, Hough, L., and Jones, J. K. N. 809
—, and Jones, J. K. N. 4432
— *see* Campbell, W. G.
Hixon, H. J. *see* Johnson, F. A.
Hjorth, H. 1545
Hjorth, R. 3534, 3539
Ho, G. *see* Bland, D. E.
Hocking, B. *see* Strickland, E. H.
Hocking, G. H. 145, 4461
Hodson, A. C. *see* Christensen, C. M.
Hoene, J. V. 302
Hof, T. 1622
Hoffman, O. L. 399
Hoffman, P. 3986
Hofman, J. 95
Hogan, B. 3349
Hogan, J. T., and Arthur, J. C., Jr. 4254
Hohf, J. P. 4387
Holand, P. 2688
Holch, A. E. *see* Jarboe, C. L.
Holcombe, R. A. 1576
Holder, E. D. 2906
Holdridge, L. R. 2153
Holgate, K. C. 825
Holland, H. 2525
Hollings, M. *see* Broadbent, L.
Holloway, J. T. 54, 4461
Holm, G. *see* Lindenberg, G.
Holmes, C. H. 2144, 2860
Holmes, G. D. 1135
—, and Ivens, G. W. 3778
—, and Matthews, J. D. 2914
— *see* Edwards, M. V.
— *see* Wood, R. F.
Holmsgaard, E. 158
—, and Kjær, A. 3767
Holopainen, V. 3274
Holsoe, T. 2996
Holt, L. 184
Holten, J. 3737
Home, Sir J. E. 2024
Hooker, L. W. 357, 511, 2209
Hoover, M. D. 1834
Hopf, M. 901
Hopkins, W. 3854
Hopkins, W. C., and Kelso, W. C., Jr. 1670
Hopmann, J. 2718
Hopping, G. R. 459, 3135
Horatiis, M. de 1827
Hořavka, F. *see* Zelinková, F.
Hordern, R. H. 1579, 2468
Horino, T. *see* Fujino, K.
Hornibrook E. M. 3199
Horton, K. W. 4440
Horvat, A. 1181, 2973, 3666
Horvat, I. 1062
—, and Emrović, B. 3445

Hosaka, Y. *see* Ito, K.
Hoshino, H. *see* Ono, M.
— *see* Shibata, N.
Hosmer, R. S. 834
Hosoi, M., Matsumoto, M., and Manabe, T. 2843
Hossfeld, R. *see* Montano, J.
Hotta, Y. *see* Hirata, T.
Hough, L. *see* Hirst, E. L.
House, H. L. 4035
Houtzagers, G. 3624
—, and Burger, F. W. 1790
Hovey, C. Y. 3189
Howard, S. H. 862
Howe, H. A. *see* Lacey, P. M. C.
Howe, S. C. 3732
Howells, T. A., and Goms, R. H. 1714
Howes, F. N. 2894
Hrycyk, R. 3352, 3353
Hsu, Y.-C. 168
Hubbard, J. K. *see* Kurth, E. F.
Huber, A. 3252
Hubert, F. P. 3086
Hubicki, F. von 3256
Hubka, R. E., Dow, N. F., and Seide, P. 3387
Hudson, M. S. 1713
Hueck, K. 909, 1991, 2863
Huey, B. M. 584
Hughes, R. H., and Rea, J. L., Jr., 3063
Huguet, L. 863
—, and Marie, E. 1101
Hume, E. P. 1232
Hummel, F. C. 1445, 2984
—, Irvine, T. S., and Jeffers, J. 521, 1420, 4078, 4079
Humphreys, F. R. 4412
— *see* Booth, H. E.
Hungate, R. E. *see* Lawton, E. J.
Hunt, F. M. 1287
Hunt, G. M. 3430
Hunziker, T. 2844
Hurpin, B. *see* Couturier, A.
Hursh, C. R. 907
Huş, S. *see* Berkel, A.
Husak, N. 3034
Huss, E. 2929, 3761
Hussain, S. M. 421, 973, 974, 3098
Hussain, T. 881
Hussey, N. W. 4064
Hustich, I. 174
Huston, M. J. *see* Henker, G. A.
Hustý, Z. 3930
Hutchinson, P. B. 2275
Hutchinson, S. B. 834
Hutson, H. P. W. 2184
Hvamb, G. 4233
Hvass, J. 265
Hyde, H. A. 1045
Hygen, G. 62
Hyler, J. 3391
Hyler, J. E. 697, 1586, 1590, 1592, 1605, 2191, 2469, 2504, 4366
Hyndle-Szmit, B. *see* Ostrowski, W.
Hyttinen, A. *see* Schafer, E. R.

I., B. 3914
Iablokoff, A. *see* Dixmier, G.
Ibaragi, T. *see* Shibata, N.
Ibberson, J. E., Mickalitis, A. B., and Kurtz, S. 1939
—, and Straeter, H. 4071
Ihsan-ur-Raman, M.
Iizuka, H. 3853
—, Tamate, S., Takakuwa, T., and Sato, T. 3852
Ilić, E. 1061
Iljin, B. A. 3892
Iljin, W. S. 2223
Illick, J. S. 834
Illies, Z. M. 2780
Ilon, B. 3884, 3909
Ilvessalo, Y. 562, 1994, 3212
Inal, S. 3691
Inaba, S., Kondo, Y., Shimada, K., and Ohta, Y. 3512
Inal, S. 3484
Ingle, H. D. *see* Dadswell, H. E.
Ingles, O. G. *see* Kurth, E. E.
Inokuma, T., and Shimaji, K. 1492
Inouye, Y., and Mitani, S. 3497
—, Nishimoto, K., and Ecchu, K. 4317
Irion, H. 1777
Irmay, H. de 4430
Irvine, F. R. 3493
Irvine, T. W. *see* Hummel, F. C.
Isaac, L. A. 221
— *see* Tarrant, R. F.
Isenberg, H. 4243
Isenberg, I. H. 4170
Ishaq, S. M. 2671, 3860
Isherwood, H. R. 758
Ishii, M. *see* Shibata, N.
Isler, D. A. *see* Yuill, J. S.
Islip, H. T., and Matthews, W. S. A. 342
— *see* Bennett, H.
Istas, J. R. *see* Lebacq, L.
Ito, C. *see* Takahasi, Y.
Itô, E., and Morishita, T. 2764
Ito, G. 1749
Ito, K. 433
—, and Hosaka, Y. 1345, 3090
—, and Kobayashi, T. 3113
Itô, M., and Kishima, T. 4172
Ito, T. 3114
Ivanoff, C. *see* Ivanoff, D.
Ivanoff, D., and Ivanoff, C. 3496
Ivanov, M. M. 3896
Ivanov, V. V. 327
Ivens, G. W. *see* Holmes, G. D.
Iwamura, M. 2740

J.-Cochico, R. *see* Alde, M. R.
Jaag, O. *see* Gäumann, E.
Jablokov, A. S. 4433
Jackson, J. K. 170
—, and Shawki, M. K. 321
Jackson, L. W. R. 2316, 3192
Jackson, W. R. *see* Hamilton, J. R.
Jacob, G. 2987
Jacobs, H. L. 409
Jacobs, M. R. 1084, 4477
Jacques-Félix, H. 4459
Jacquiot, C. 486, 609, 1051, 1383, 1660, 2786, 3630
Jagerschmidt 2004
Jahn, E. C. *see* Timell, T. E.
Jaime Fanlo, F., and Navarro, M. 1185
Jain, N. C. *see* Narayanamurti, D.
Jakadin, A. I. 3932
James, L. M. *see* Sternitzke, H. S.
James, N. D. G. 2026, 3953
Janchen, E. 991
Jamil, M. B. *see* Mayne, J. E.
Jančo, J. 1273
Janiczek, M., and Stebnicka, E. 3412
Janssonius, H. H. 601, 602, 610, 3291
Jarboe, C. L., Keating, R. E., and Holch, A. E. 1961
Járó, Z. 2737
Jaroš, P. 3759, 3760
Jaspal, N. S. *see* Bhat, R. V.
Jayme, G. 1526, 3453
Jefferies, R. 1684
Jeffers, D. S. 1260
Jeffers, J. *see* Hummel, F. C.
Jeffers, J. N. R. 3216
Jelley, J. F. 3430
Jenkins, A. E., and Bitancourt, A. A. 3120
Jenkins, C. E. 4242
Jenkins, J. H. 2387
Jennings, J. E. 1663
Jensen, C. E. *see* Brunson, F. D.
— *see* Moessner, K. E.
Jensen, P. B. 4067
Jensen, V. S., and Wilson, R. W. 2124
Jensen, W. 639, 2596, 2597, 4213
—, and Rainio, P. 4376
Jentys-Szaferowa, J. 106, 2802, 2803
Jessen 1785
Jevtić M. 3811
Joachim, H. F. 3846
Johannes, H. 417
Johansson, P. E. *see* Siimes, F. E.
Johnson, A. G. 3620
Johnson, B. L. C. 2620
Johnson, C. E., and Thomas, L. R. 387
Johnson, E. A. 3582
Johnson, E. W. 2163
Johnson, F. A., and Hixon, H. J. 3214
Johnson, J. W. 2426
Johnson, L. A. S. *see* Garden, J.
Johnson, M. 1553
Johnson, R. S. 1998
Johnson, W. L. 557
Johnsson, H. 1122, 1123, 2051, 3749
Johnston, D. R. 1490, 2403, 3290, 4165
Johnston, H. R. 4350
Johnston, I. M. 107
Jonas, G.-Z. *see* Sandermann, W.
Jones, E. W. 3735
— *see* Troup, R. S.
Jones, G. N. 114
Jones, G. W. 2589
Jones, I. E. 1315
Jones, J. K. N. *see* Hirst, E. L.
Jones, W. N., and Levisohn, I. 1942
Jonson, I. 3258
Jönsson, P. 3935
Jopson, H. E. 711
Jordan, H. 4070
Jørgensen, E., and Petersen, B. B. 3979
Jörgensen, L. 2442
— *see* Björkqvist, K. J.
— *see* Heuser, E.
Josephson, L. M. 1307
Joshi, D. P. 3845
Jovanović, B. 1964
Jovković, B. 326
Joy, F. A., Queer, E. R., and Schreiner, R. E. 1508
Judenko, E. *see* Hanna, A. D.
Juhren, G. *see* Stone, E. C.
Jui, W. *see* Wilson, S. D.
Julian, J. R. *see* Ray, D. L.

Junack, 3807
Junovidov, A. P. 1035
Jurd, L. *see* King, F. E.
Jurkevič, I. D. 207, 4433
Jurko, A. 3704
Juštšuk, E. 1609
Juta, E. H. P. 3257

K., T. 2981
Kaburagi, Z. 1505
Kabzems, A. 1431, 3729
Kadambi, K. 111, 1244, 1996, 2109, 2148, 3667
—, and Rawat, A. S. 344
Kadita, S. *see* Harada, H.
Kaeiser, M. 944, 2401, 2402
Kafol, A. 4040
Kahila, S. *see* Gustafsson, C.
Kalandra, A. 3939
Kalašnikov, P. L. 3886
Kallio, K. 873
Kalmár, Z. 2824
Kalseth, L. 2530
Kamei, S. 420, 3100
Kameke, C. von 1266
Kamiizaka, M. *see* Fujibayashi, M.
Kamp, J. 923
Kanaya, Y. *see* Kawada, M.
Kanezawa, R. 75, 958
Kangas, E. 913
Kano, T. 1506
Kantchaveli, G. J. 343
Kantola, M. 3043, 4192
—, and Granvik, B.-A. 3883
Kantor, J. 2347, 2910
Kantzer, C. J. 2203
Kapadia, G. A. 2654
Kapuściński, S. *see* Borusiewicz, A.
Kar, B. C. *see* Roy, S. K.
Karavaev, V. I., and Slavjckiĭ, I. I. 4238
Karelin, T. I. 1186
Karlsen, O. *see* Klem, G. G.
Karpiński, J. J., and Strawiński, K. 492
Karschon, R. 81, 82, 2096
Kasalický, E. 3756
Kassas, M. 164, 3703
Kastmark, C. F. 2578
Kato, S. 366
— *see* Fujibayashi, M.
Katsuki, S. 3545
Kausel, E. 1040
Kawada, M., and Kanaya, Y. 284
—, and Kijima, T. 529
—, and Yamaji, K. 210
Kawagushi, T., Watanabe, R., and Takiguchi, K. 2750
Kawana, A. *see* Shibamoto, T.
Kaylor, J. F. 834
Kazmi, S. M. A. 1241
Keating, R. E. *see* Jarboe, C. L.
Keay, R. W. J. 3522
Keck, D. D. *see* Munz, P. A.
Kedzierski, Z. 2939
Keen, B. A. 1783, 2701
Keenan, J. *see* Hayes, S. F.
Keener, P. D. 975
Keeping, G. S., and Matheson, H. D. 1318
Keet, J. D. M. 985
Keetch, J. J. *see* Lindenmuth, A. W., Jr.
Kehar, N. D., and Deb Goswami, M. N. 1719
Keilen, J. J., Dougherty, W. K., and Cook, W. R. 3474
Keiner, G. 677
Kekuh, A. M. 3864
Keller, E. L. 3466
Keller, J. 1468
Kellog, C. E., and Nygard, I. J. 899
Kellogg, R. S. 2306
Kelso, W. C., Jr. *see* Hopkins, W. C.
Kemp, P. B. 756
Kennedy, D. 4442
Kennedy, D. E. 2387, 2510
Kennedy, J. S. 1840
Kent, N. E. *see* Tamblyn, N.
Kephart, L. W. 264
Ker, J. W. *see* Allen, G. S.
Kerk, G. J. M. van der *see* Klöpping, H. L.
Kermani, W. A. 1103
Kernan, H. S. 837, 2657
Kerr, A. F. G. *see* Craib, W. G.
Kerr, T. W. 1361, 1369
Kesarcodi, N. 2047, 2147
Keylwerth, R. 1480, 1521, 2480, 2573, 3323, 4157, 4287, 4356
— *see* Kollmann, F.
Khan, A. A. 881
Khan, A. H. 1327
Khan, F. M. 881
Khan, M. 881, 2106
Khan, M. A. 881
Khan, M. I.-ur-R. 211, 2778
Khattak, G. M. 802
Kidd, W. J. 4074
Kiefer, H. J. *see* Kurth, E. F.
Kiellander, C. L. 74, 76, 1121
Kienitz, 1785
Kierulf, T. 1793
Kijima, T. *see* Kawada, M.
Kilcher, M. R. 1307
Kimbrough, E. F. *see* Mirov, N. T.
Kimura, Y. *see* Tachi, I.
King, F. E., and Grundon, M. F. 650
—, Jurd, L., and King, T. J. 4218
—, and King, T. J. 649
—, King, T. J., and Sellers, K. 4222
—, King, T. J., and Warwick, A. J. 648, 4223
King, N. L. 2097
King, T. J. *see* King, F. E.
Kinghorn, J. M. 459
Kingsbury, R. M. 2451
— *see* Simmonds, F. A.
Kingston, R. S. R., and Armstrong, L. D. 2425
Kinloch, D., and Miller, W. A. 4148
Kiščenko, T. I. 3903
Kiselev, M. A. 2889
Kishen, J. *see* Rehman, M. A.
Kishima, T. *see* Harada, H.
— *see* Itō, M.
Kishimoto, S. 3478
Kisser, J., and Frenzel, H. 636
—, Köli, G., and Steininger, A. 2612
—, and Steininger, A. 2398
Kissin, I. 4108
Kitahara, K. 634, 3469
— *see* Hirai, S.
Kitsutaka, G., and Ōyama, N. 2946
Kivelä, A., and Saarela, M. O. 372
Kivimaa, E. 1546
Kjær, A. 243
— *see* Holmsgaard, E.
Klæbo, K. 2088
Klaehn, F. U. 2038
Klanjšček, V. 1274
Klauditz, W. 631, 3467
—, and Stegmann, G. 3475
Kleiser, E. 737
Klem, G. G. 2213, 3027, 3461
—, and Karlsen, O. 3355, 3357
—, and Seem, M. 3143, 3356
Klimov, V. I. *see* Èitingen, G. R.
Kling, J. B. 2231
Klingman, D. L. 399, 1307
—, *et al.* 1307
Klinkowski, M., and Nolte, H.-W. 3160
Kljušnik, P. I. 2253
Klöck, W. *see* Ehrhardt, F.
Kloot, N. H., and Walker, V. Y. 3468
Kloot, W. G. van der 3861
Klöpping, H. L., and Kerk, G. J. M. van der 60
Kneale, R. E., and Tamblyn, N. 4321
Knežević, M. 2463
Knight, E. 1668
Knight, R. A., Doman, L. S., and Newall, R. J. 1562
Knight, R. A. G., Carruthers, J. F. S., and Thomas, A. M. 2416
Kobayashi, T. 2944
— *see* Ito, K.
Kobendza, R. 2784
Koblic, J. 4402, 4435
Kobuski, C. E. 120, 1010, 1925, 2811, 3662
Koch, P. 680
Koch-Schmidt, A. 843
Kočkarj, N. T. 2915
Kodrič, M. 2931
Koeberle, J., Senior 4244
Koehler, W. 4013, 4059
Koeppen, A. von, and Cohen, W. E.
Köhler, R., and Enzenberger, W. 4257
Kokkinis, J. 2532
Kolarović, S. 2815
Kolčin, A. I. 231
Kolesnikov, S. N., Meljnikov, S. E., Šešukov, N. G., and Ktorov, A. V. 4310
Köli,G. *see* Kisser, J.
Kollmann, F. 589, 2385, 2576, 4388
—, Keylwerth, R., and Kübler, H. 2575
Kolomiec, N. G. 3161
Kolubajiv, S. 3167
Kon, T. 1517
Konda, K. 12
Kondo, Y. *see* Inaba, S.
Kondratjeva, V. K. *see* Demjanovskiĭ, S. Ja.
Konev, G. I. 3006
König 1785
Kools, J. F. 555, 2199
Kop, L. G. 292
Kopitzke, J. C., and Langford, J. K. R. 3782
Korenek, K. *see* Vincent, G.
Kormilicin, A. M. 2958
Koroleff, A. 726
—, *et al.* 3248
Korsuň, F. *see* Vincent, G.
Korunov, M. M. 392
Koščeev, A. L. 4433
Kossenakis, G. 1892
Köstler, J. N. 3820
Kotok, E. S. 1210
Kotwal, E. K. 4128

Koutero, N. 4132
Kovalin, D. T., and Voevoda, D. K. 254
Kovrigin, S. A. 27
Kowalski, K. 52
Kōzai, Y. *see* Gotō, R.
Jožanov, D. I. *see* Volodenkov, F. I.
Kozlov, V. P. 1804
Kraebel, C. J. 39
Kraemer, G. D. 499
Kraemer, J. H. 1514, 3643
Kraemer, O. 3379
Krahl-Urban, J. 885, 1934, 2008
Krajicek, J. E. *see* Brinkman, K. A.
Kraljić, B. 4482
Kramer, P. J. 1853, 3576
—, Riley, W. S., and Bannister, T. T. 3603
Krasulin, N. P. 4433
Krébes, G. 241
Krefting, L. W. 1977, 2281
Kreknin, V. V., and Lukjjančikov, S. N. 3894
Krenn, K. 3203
Krishnamoorthi, R. *see* Ramaswamy, M. N.
Kriška, S. 3822, 3823
Kröll, K. 3442
Krotova, N. G. *see* Ĕĭtingen, G. R.
Krpan, J. 1588
Krstić, M. 1134, 1136, 3097, 3117, 3992
—, and Stankević, P. 1133
Krueger, N. T. *see* Bell, E. R.
Kruel 1785
Krupenikov, I. A. 1940
Krutikov, L. P. *see* Lazarevič, I. I.
Krzysik, F. 3287
Ktorov, A. V. *see* Kolesnikov, S. N.
Kübler, H. 4284
— *see* Kollmann, F.
Kucera, C. L. 4456
Küch, W. 667, 2552
Kudaševa, R. F. 960, 4433
Kudzin, S. F., DeBaun, R. M., and Nord, F. F. 3336
—, and Nord, F. F. 1529, 3337
— *see* DeBaun, R. M.
Kuenzel, J. G. 3430
Kuenzi, E. W. 4291
Kuhlmann, J. G. 3652
Kühlwein, H., and Anhaeusser, H. 1952
Kuhn, W. 396
Kühne, H. 2511
Kühnelt, W. 33, 902
Kujala, V. 412
Kulescha, Z. 1878
Kulkarni, Y. S. *see* Patel, M. K.
Kulp, D. A. *see* Spaeth, J. N.
— *see* Walters, C. S.
Kulp, J. L., Feely, H. W., and Tyron, L. E. 1963
Kummer, H. 1741
Künanz, H. 2983
Kuntz, J. E., Beckmann, C. H., and Riker, A. J. 3108
—, and Riker, A. J. 1208, 1311
—, Riker, A. J., and Thomas, J. E. 1312
— *see* Beckman, C. H.
Kunugi, R. 2870
Kunz, R. *see* Leibundgut, H.
Kurata, M., and Nakadaira, K. 952
Kurencov, A. I. 2564
Kurth, E. E., Foster, D. H., Ingles, C. G., Ralph, B. J. F., and Shipp, M. H. R. 1711
Kurth, E. F. 645, 786, 2431
—, and Chan, F. L. 3487
—, and Hubbard, J. K. 1720
—, Hubbard, J. K., and Gekeler, M. 796
—, and Kiefer, H. J. 2627
—, and Ratnam, C. V. S. 2628
— *see* Hergert, H. L.
Kurtz, S. *see* Ibberson, J. E.
Kusaka, M., and Midorikawa, T. 2842
Kusmarceva, N. M. *see* Zozulin, G. M.
Küster, E. 4066
Kutluk, H. 3509
Kuźniar, K. 1811

Laage-Hellman, B. 2207
Laaksonen, Y. W. 3546
Laar, A. van 3211
Lacey, P. M. C., Howe, H. A., and Soane, G. E. 2477
—, and Soane, G. E. 2478
Lack, D. 928
—, and Lack, E. 1842
Lack, E. *see* Lack, D.
Lacko, E. *see* Geluwe, J. van
Laer, W. von 885
—, and Spiecker, M. 3204
Lafitte, R. *see* Faurel, L.
Lafond, A. 1807, 2732, 2767
Laidlaw, W. B. R. 2283
Laing, E. V. 993
Lal, A., and Tandon, I. N. 3999
Lal, S. B. *see* Prasad, N.
Lalog, N. P. 1458
Lamb, F. B. 2022
Lamb, G. N. 595, 1482, 1483, 2391, 3283, 4155
Lambert, J. 1286
Lámfalussy, S. 2887
Lamont, I. 1002
Lamprecht, H. 2117
Lancaster, P. C. *see* Rosevear, D. R.
Lane, C. E. 3430
Lane, C. Rodrigues 1139
Lane, R. D. *see* Chapman, A. G.
Lange, K. D. 308
Lange, P. W. *see* Asunmaa, S.
Langford, G. S. 2287
Langford, J. K. R. *see* Kopitke, J. C.
Langner, W. 2773, 2902, 3618
Langsæter, A. 4450
Lansell, C. V. *see* Ellwood, E. L.
Lantelmé, W. 2067
Lány, J. 3306
— *see* Bokor, R.
Larionov, A. I. 3895
Larsen, N. A. 3697
Larsen, P. 1851
Larson, W. H. 2249
LaRue, C. D. 3680
—, and Muzik, T. J. 2841, 3695
Lasschuit, J. A. 273, 3699
Latham, B. 3268
Latham, J. D. 2586
Latour, J.-M. 2264
Laudelot, H., and Du Bois, H. 3568
—, and Meyer, J. 1820
Lauffenburger 2961
Lavagnino, R. 4455
Laver, C. F. 527
Lawrence, D. B. 1969
Lawton, E. J., Bellamy, W. D., Hungate, R. E., Bryant, M. P., and Hall, E. 1534, 4215
Layton, K. *see* Liming, O. N.
Lazarevič, I. I., and Krutikov, L. P. 2966
Leaphart, C. D. *see* Gill, L. S.
Lebacq, L., and Istas, J. R. 1478
Lebedeva, L. I. 1396
Lee, Y. H. *see* Thode, E. F.
Lefebvre, Rabouille, and Valette 4444
Legancev, M. I. 2080
Leggett, H. W. 331, 399, 1307
Lehelä, E. 4277
Lehtonen, J. 59
Leiber, L. 1748
Leibundgut, H. 2116, 2118, 3684
—, and Kunz, R. 2849
Leijonhufvud, A. C. 8, 2206
Leijonhufvud, A. E. 367
Lejeune, R. R. 459, 1406
Lekander, B., Mathiesen, A., and Rennerfelt, E. 1335
Lekander, J. 1147
Lemay, P. V. 364
Leme, J., Jr. *see* Malavolta, E.
Lemps, F. de 1083, 1453
Lengerken, H. von 2302
Léonard, J. 1910, 1913, 2658, 3715
—, and Hebbelynck, M.-F. 2639
Léonard, J. J. G. 3657
Leontjev, V. L. 2176
Leopold, B. 4207
—, and Malmström, L.-L. 4208
Lepencov, P. A. 3905
—, and Abolj, I. P. 3899
Lescaffette, J. 530
Leslie, A. P. 1170, 2916, 2917
Leslie, R. T. *see* Stewart, C. M.
Lesohner, F. *see* Reichenstein, E.
Le Sueur, A. D. C. 3859
Letouzey, R. 1725
Leuhina, T. A. *see* Voropanov, P. V.
Leven, J. K. 1041
Lever, R. J. A. W. 4028
Levin, M. B. 3925
Levisohn, I. 1143, 3681
— *see* Jones, W. N.
Levitt, J. 1851
Lewis, H. C. 4398
Lewis, H. F. 2430, 3462
Lewis, N. 1911
Lewis, S. H. 1683
Lewis-Jonsson 2061
Lexen, B. 1997
Leyton, L. 1024, 2822
Lhoas, J. 3632
Lhota, O., Uhlíř, P., and Mařan, B. 3850
— *see* Mařan, B.
Li, H.-L. 98, 3646
Lidén, S.-Å. 3876
Liese, W. 2542
Lihtonen, V. 2648
Liiri, O. 626
Lilburn, W. 1747
Liljestrand, M. 3982
Lilly, C. H. *see* Marke, D. J. B.
Lima, D. de A. 2801
Liming, O. N., Rex, E. G., and Layton, K. 431
Limstrom, G. A., and Deitschman, G. H. 2969
— *see* Stoeckeler, J. H.

Linck, O. *see* Zimmerle, H.
Lindberg, K. 1279, 3050, 3936
Lindberg, S. O. 3798
Linde, R. J. van der, and Woudenberg, J. P. M. 1221
Lindeberg, G., and Holm, G. 3571
Lindemuth, A. W., and Nelson, R. M. 2229
Lindemuth, A. W., Jr., Keetch, J. J., and Nelson, R. M. 2244
Lindgren, B. O. 3334
Lindgren, R. M. 3429
Lindh, T. *see* Gustafsson, C.
Lindner, J. 1558
Lindquist, B. 956
—, and Petrini, S. 2130
Lindsey, A. A. 1056
Lindstedt, G. 643, 1539
—, and Misiorny, A. 1537, 1538
— *see* Erdtman, H.
Lindtgren, B. O. 1527
Linskens, H. F. 3575
Lipsitz, P., and Lollar, R. M. 4395
Lisin, S. S. 4433
Lister, S. 660
Little, E. L., and Dorman, K. W. 3693
Little, E. L., Jr. 1929
Little, S., and Somes, H. A. 2042
Litvinov, M. A., and Moiseeva, E. N. 58
Lloyd, R. W. *see* Allen, A. A.
Lobaev, N. I. 2890
Lockard, C. R. 3450
Locker, R. H. *see* Briggs, L. H.
Loewenberg, J. R., and Skoog, F. 3629
Løfting, E. C. L. 3747
Logan, K. T. 193, 1193, 2015, 2078
Löhr, T. 2101
Lollar, R. M. *see* Lipsitz, P.
Linćar, I. 188, 2979
Longwood, F. R. *see* Eyre, F. H.
Loock, E. E. M. 984, 996
Lopez Balazote, A. 2372
Lorenz, R. W. 1461
Losee, S. T. B. 4115
Lotti, T., and McCulley, R. D. 2855
Lourmpopoulos, G. D. 2621
Loustalot, A. J. *see* Muzik, T. J.
Louvel, M. 214
Louw, W. J. 1072
Løvengreen, J. A. 526, 3836, 4101
Lovett, J. F. *see* Foot, A. S.
Lovrić, N. 1268
Lowe, C. J. *see* Beall, H. W.
Lozovoĭ, A. A. 240
Lubisch, H. 1100
Lücke, H. 2127, 3617
Ludvigsen, F. P. 2358
Lukjjančikov, S. N. *see* Kreknin, V. V.
Lukjjanov, A. K. 287
Lunam, E. A. 3024
Lundberg, G. 4008
Lundin, L. *see* Söderström, N.
Lunel, F. A. V. *see* Alphen de Veer, E. J. van
Lungren, E. A. 1307
Lunt, H. A. 721, 1175, 2731
Lunzon, S. N. *see* White, L. T.
Lutz, H. J. 1353, 3945
Lutz, H. L. 2831
Lutz, J. F. 4285
Lynch, D. W., and Chapman, R. A. 1472
Lyon, N. F. 2839
Lyons, L. A. 1370
Lyons, R. H. *see* Armstrong, W. N. B.
Lysenko, T. D. 3003

Maartmann, K. 779, 2219, 2362
Mabba, A. A. 1566
Mabesa, C. 4396
McBride, C. F. 1582
Macbride, J. F. 989, 3641
McCabe, L. C. 4311
McCabe, T. T. 1349
McCall, G. L. 399, 1307
Maccario, G. 1231
McClay, T. A. *see* Evans, T.
McClure, F. A., and Durand, F. M. 267, 3790
— *see* Hambleton, E. J.
McColl, B. J. 1249
McComb, A. L. *see* Einspahr, D.
McConkey, T. W., and Gedney, D. R. 3066
McCraw, W. E. 3911
McCrea, G. W. *see* Ambler, H. R.
McCulley, R. D. *see* Lotti, T.
McCully, W. G. 1307, 4102
McDermott, R. E., and Burns, P. Y. 2087
MacDonald, D. L. *see* Fischer, H. O. L.
MacDonald, D. R. 4006
MacDonald, J. 892
MacDonald, J. A. B. 1180
MacDonald, M. D. 693, 1707, 2496, 3396
McElhanney, T. A. 2387
McGeorge, W. T. *see* Breazeale, E. L.
McGovern, J. N. 3464
— *see* Brown, K. J.
MacGregor, J. J. 1780, 2365, 3270, 3506, 3510
McGregor, W. D. 757
McGuffin, W. C. 44
McGugan, B. M. *see* Bergold, G. H.
Machado, O. X. de Brito 808
McIntosh, D. C. 2189, 2212
McIntosh, R. P. 2861
— *see* Curtis, J. T.
McIntosh, W. G., and Church, J. W. 657
McIntyre, A. C. 722
Mack, G. W., and Savory, J. G. 4341
Mack, J. J. 4246
—, and Cooper, K. L. 3326
Mackay, E. 2354
MacKay, M. R. 919
McKee, R. G. 1258
McKee, W. F. 4378
McKennis, H. 3431
Mackenzie, A. M. 1176
Mackenzie, J. M. D. 460, 3141
McKinnon, A. D. 4461
MacLagan, C. F. 2474
MacLagan, D. S. 1364
MacLean, H., and Gardner, J. A. F. 3446
MacLean, J. A. R. 4431
MacLeod, D. M. 475
McLeod, N. W. 1277
McLintock, T. F. 2318
McMillen, J. M. 1669, 2574
McMinn, R. G. 3718
McMullen, M. J. 1632, 1633, 4347
McNeel, W. *see* Abbot, R. W.
McNulty, M. E. 1144
McQuilkin, W. E. 2121, 2122
Macrae, R. *see* Vanterpool, T. C.
McVaugh, R. 2808
McVey, G. 4245
Maczewski-Rowiński, B., and Czereyski, K. 3398
Mądalski, J. 2816
Madlen, J. 2886
Maeda, T. 2858
—, and Shimazaki, Y. 1065
Maeda, Y. 3221, 3237
Mägdefrau, K., and Wutz, A. 36
Magini, E. 1131
Maguire, B. 2807
Mahatadze, L. B. 1104
Maher, C. 911
Maheu, C. 2497
Mahmud, K. A., and Nema, K. G. 418
Mahood, I. 1786, 3543
Mainieri, C. *see* Pereira, J. Aranha
Maire, R., and Monod, T. 1884
Maisenhelder, L. C. 3828
Makarov, N. I. 3200
Maki, T. E. 3752
—, and Henry, B. W. 1150
—, and Mann, W. F. Jr. 447
Makkonen, A. 355
Maku, T. 3440, 4177
Malavolta, E., Leme, J., Jr., Gurgel, J. T. A., and Sobrinho, J. Soubihe 4417
Malençon, G., and Marion, J. 2266
Malevskaja, S. S., and Harad, S. D. 813
Malhotra, M. K. C. 2105, 2893
Maljcev, M. P. 208, 1105
Malmström, C. 2980, 3523
Malmström, L.-L. *see* Leopold, B.
Manabe, T. *see* Hosoi, M.
Manalo, G. D., and West, A. P. 2640
Mandel 1785
Mangenot, G. 1068, 1069, 1801
—, and Raison, M. 2410
— *see* Emberger, L.
Mann, W. F. Jr. 309
— *see* Maki, T. E.
Mansfeld 1785
Mantel 198
Manuel Patiño, V. 116
Mařan, B., and Lhota, O. 3959
—, Lhota, O., and Uhlíř, P. 3849, 3851
— *see* Lhota, O.
Marassi, A. 3537
Marcelin, P. 2260, 2708
Marcet, E. 2057
March, E. W. 2379
Margolin, R. 2061
Marie, E. *see* Huguet, L.
Marinković, B. 1217
Marion, J. *see* Malençon, G.
Marion, P. T. *see* Fisher, C. E.
Marke, D. J. B., and Lilly, C. H. 377
Marković, L. 235
Marler, P., and Boatman, D. J. 3711
Marples, E. G. *see* Buckland, D. C.
Marrero, J. 196
—, and Wadsworth, F. H. 2134
Marsden, D. H. 382, 1627, 3843
Marsh, E. K. 4075
— *see* Rault, J. P.
Marsh, J. W. *see* Heller, R. C.
Marshall, C. 559, 4447

Marshall, W. H. 2761
Marston, R. B. 3579
Marti, L. 2356
Martin, J. S. 4381
—, and Brown, K. J. 4380
Martin, P. E. *see* Bell, G. E.
Martin, P. J. *see* Duncan, D. B.
Martinek, V. 4050, 4062
Martínez, M. 3660
Martinez Garcia, J. *see* Gutierrez Jarquin, T.
Marts, R. O. 155
Maruyama, M. *see* Fujibayashi, M.
Masamune, G. 1007
Masani, N. J. 1278
Mathauda, G. S. 2837
Mathers, W. G. 1393
Matheson, H. D. *see* Keeping, G. S.
Mathiesen, A. 971, 3418
— *see* Lekander, B.
Mathur, A. K. 2252
Mathys, G. *see* Baggiolini, M.
Matsuda, R. *see* Ukita, T.
Matsumoto, M. *see* Hosoi, M.
Matthews, J. D. 953
— *see* Holmes, G. D.
Matthews, L. J. 1225
Matthews, W. S. A. *see* Islip, H. T.
Matthysse, J. G., and Clower, D. 4018
—, and Naegele, J. A. 509
Matton, H. G. 2950
Matusz, S. 3223
Matuszewicz, 536, 1813
Maudoux, E. *see* Donis, C.
Maung Hman 4133
Maung, U Win 2529
Maury, R. 3808
May, R. H. 3273
Mayer, A. M., and Gorham, E. 934
Mayer, K. R. 4454
Mayer-Wegelin, H. 1649
—, and Winterfeld, K. 2414
Maymone, B., and Battaglini, A. 1740
Mayne, J. E., and Jamil, M. B. 1263
Mayné, R., and Donis, C. 1652
Mazek-Fialla, K. 1236
Meade, F. M. 3741
Meara, M. L. *see* Hilditch, T. P.
Mee, J. *see* Bodman, P.
Meek, W. L. *see* Walters, C. S.
Mégille, X, de 2204, 4275
Mehra, P. N., and Sircar, M. K. 943
Mehrotra, B. S. 1857
Mehta, P. R. *see* Prasad, N.
Meierhans, J. 2068
Meikle, R. D. 1899
Melander, L. W. 1307
—, *et al.* 399, 1307
Melihov, P. S. 2907
Meljnikov, S. E. *see* Kolesnikov, S. N.
Meller, A. 2599
Mellins, L. 1466
Melville, R. 969
Memelink, G. 4104
Mendia, J. M. de Almeida de 2368
Mendonça, F. A. 1885
— *see* Exell, A. W.
Menjšikov, G. P., Gurevič, E. L., and Samsonova, G. A. 2633
Menzies, R. J. 3430
Mercier, R. 2200
Merrick, G. D. 4141
Merrill, E. D. 121, 1924, 3659
Merz, R. W. 1173
—, and Finn, R. F. 1191
—, and Plass, W. T. 2975
— *see* Gaiser, R. N.
Meščerin, Ja. 2083
Meseke, W. A. 3392
Mesnil, H. 3933
Mesquita, G. Seixas de 1606
Metcalf, M. E. 374
Meteer, J. W. 1610, 4080
Metelmann, R. 497
Metreveli, P. A. 1089
Meusel, H. 3707
Meyer, H. A. 4123
— *see* Chamberlain, E. B.
Meyer, J. 2788, 2789
— *see* Laudelot, H.
Meyer, K. A. 621
Michel, A. 165
Michell, A. S. 4091
Mickalitis, A. B. *see* Ibberson, J. E.
Midorikawa, T. *see* Kusaka, M.
Miège, J. *see* Emberger, L.
Mielke, J. L. 3996
Migita, N. *see* Miura, I.
Mignery, A. L. 1450
Miguet 2974
Mihajlov, I. S. 4097
Mikola, P. 540, 541, 3785, 4098
— *see* Wilde, S. A.
Mikulski, J. St. 46
Milanez, F. Romano 2408
—, and Neto, H. Monteiro 2826
Miljkov, F. N. 1004
Millar, J. B. 1463
Millener, L. H. 3668
Miller, A. D. S. *see* Wood, R. F.
Miller, C. M. 4156
Miller, C. W. 2336
Miller, D. G. 2387, 2506
Miller, M. S. 3904
—, and Rešetov, A. V. 3901, 3919
Miller, P. R., and O'Brien, J. 2276
Miller, R. G. 4103
Miller, W. A. *see* Kinloch, D.
Miller, W. D. 2991
Millet, R. S. 2387
Millischer, H. 2708
Milne-Redhead, E. *see* Turrill, W.B.
Milosavljević, R. 3172
Milošević-Brevinac, M. 322, 910
Milov, S. G. *see* Šibalov, V. I.
Minami, K. *see* Shibamoto, T.
Minckler, L. S. 286, 2900, 2970, 3748
Minina, E. G. 1044
Minor, C. O. 1429
Minshall, W. H. 1310
Mintzer, M. G. 3665
Mir'ap, M. 4077
Mirković, D. 3241
Mirov, N. T. 1731, 2913, 3502, 4423
—, and Kimbrough, E. F. 3862
— *see* Haagen-Smit, A. J.
Misiorny, A. *see* Lindstedt, G.
Misra, S. D. *see* Roonwal, M. L.
Mitani, S. *see* Inouye, Y.
Mitchell, M. T. *see* Reid, J. S.
Mitchell, N. D. 3315
Mitchell, R. L. *see* Ritter, G. J.
Mitchell, R. T. 4032
Mitra, J. N., and Datta, R. M. 945
Mitscherlich, G. 3230
Miura, I., and Migita, N. 1699
—, Shibamoto, T., Satoo, O., and Satoo, Y. 789
Miyajima, H. 2945
Miyakoshi, M. *see* Sato, Y.
Miyazaki, M. *see* Shibamoto, T.
Miyoshi, S., and Ogata, Y. 3879
Moessner, K. E., Brunson, F. D., and Jensen, C. E. 1451
—, and Jensen, C. E. 3246
Moffett, A. A. 245
Mohammad, S. 686
Mohanty, A. P. 4421
Mohaupt, A. A., and Heebink, B. G. 4292
Mohler, L. L., Wampole, J. H., and Fichter, E. 930
Mohr, K. *see* Bally, P. R. O.
Moiseenko, F. P. 4433
Moiseeva, E. N. *see* Litvinov, M. A.
Molander, E. G. *see* Scholten, J. A.
Molesworth, F. C. 3046
Møller, C. M. 4073
—, and Gram, K. 4176
Möller, T. 4248
Moltesen, P. 576, 3286, 4453
Money, P. L. 2517, 3393
Monferrato, R. 300
Monod, T. *see* Maire, R.
Montano, J., and Hossfeld, R. 2600
Monteiro, R. F. Romero 1692
Monzon y Mosso, C. 1454
Mooney, O. V. 1106
Moor, M. 1980, 1981
Morales Chofré, E. 895
Moreau, C. *see* Moreau, M.
Moreau, M., and Moreau, C. 1333
Moreland, D. E. 938
Morgan, E. N. 748
— *see* Kirkinshaw, J. H.
Morgan, J. T. 727
Morgenthal, J. 992
Moriondo, E. 3092
Morishita, T. *see* Itô, E.
Mork, E. 2084, 2955, 3762, 3806
Mørkved, K. L. 1935
Morley, P. M. 3878
Moroe, T., and Hara, S. 2637
Morozov, N. A. 4294
Morpeth, Lord 3126
Morris, M. P. 4419
Morris, R. F. 148, 459, 1355, 1403, 3163, 4072
—, and Bishop, R. L. 1375
Morris, R. J. *see* Billings, W. D.
Morrison, A. *see* Allison, B. J.
Morrison, B. Y. 3009
Morrison, F. T. 146
Morrow, R. R. 4434
Morton, A. G. 941
Morton, D. *see* Chittenden, A. E.
Moss, V. D. *see* Offord, H. R.
Mottet, A. L., and Ring, W. C. 627, 1671
Mould, R. C. L. 2977, 3130
Mouranche, R. 597
Moutia, L. A. *see* Williams, J. R.
Mouton, G. 385
Moyse-Mignon, H. *see* Paris, R.
Mráček, Z. 3709
Mueller, L. A. 1583
Mukherjee, J. N. 862
Mukherjee, S., and Srivastava, H.C. 1739
Mukherjee, S. K. 959
Mülder, D. 1340
Müller, R. 885
Müller-Thomas 198

Mullison, W. R., Coulter, L. L., and Barrons, K. C. 3075
Münch, E. 228
Muntz, H. H. 2120
Munz, P. A., and Keck, D. D. 1075
Murphy, P. W. 905
Murray, J., and Stanley, B. G. 3499
— *see* Briasco, J. D.
Muto, K. *see* Sato, Y.
Muzik, T. J., and Cruzado, H. J. 3608
—, Loustalot, A. J., and Cruzado, H. J. 3968
— *see* LaRue, C. D.
Myers, W. J. 4137

Naegele, J. A. *see* Matthysse, J. G.
Nagata, J. *see* Suzuki, K.
— *see* Tanimura, T.
Nagatomo, I. *see* Akai, S.
Najera y Angulo, F. 4159
—, and Rifé Lamprecht, M. P. 1237
Nakadaira, K. *see* Kurata, M.
Nakajima, Y. *see* Shibamoto, T.
Nakamura, T. 3328
Nakano, H., and Otaki, I. 3580
Nakashima, T. 48
Nambiyar, V. P. N. 3309, 3310
Nanayya, K. M. 183
Narasimha Rao, P. L., and Verma, S. C. L. 3489
Narayanamurti, D. 2544
—, *et al.* 1608
—, and Das, N. R. 2626
—, George, J., Subramanyan, N., and Das, N. R. 4293
—, and Jain, N. C. 3311
—, and Prasad, B. N. 4289
—, Ranganathan, V., and Ratra, R. S. 1507, 3320
—, Ranganathan, V., Singh, R., Chandrasekhar, T. R., and Banerjee, A. 1626
—, and Singh, J. 1850
Nash, R. W. *see* Duda, E. J.
Näslund, M., and Hagberg, E. 3205
Nation, H. A. 402, 3080
Nattrass, R. M. 1339
Naude, T. J. 483
Navalkar, B. S., and Bharucha, F. R. 1941
Navarro Garnica, M. 1098, 1184
Navarro, M. *see* Jaime Fanlo, F.
Naves, Y.-R., and Ardizio, P. 818
Návrat, C. 3692
Neal, M. C. 950
Neale, F. R., Pearson, A. J., and Somerville, J. L. 4383
Nefedova, V. A. *see* Demjanovskiĭ, S. A.
Neilson, J. E. 1703
Nekrasov, M. M. 2545
Nelson, R. M. *see* Byram, G. M.
— *see* Lindenmuth, A. W.
— *see* Lindenmuth, A. W., Jr.
Nelson, R. N. 675
Nelson, T. C. 3805
Nema, K. G. *see* Mahmud, K. A.
Němec, A. 55, 252, 2125, 3593, 3825, 3948
Nesterov, V. G. 180
Netboy, A. *see* Frank, B.
Neto, H. Monteiro *see* Milanez, F. R.
Netušil, A. V., and Goljdblatt, B. A. 4361
Neubauer, L. W. 1640
Neumann 1928
Neumoin, N. I. 3898
Neuns, A. G. 388
Neusser, H. 1587
Neves, C. M. Baeta 455, 493, 2285, 2696
Neville, H. B. 403
Newall, R. J. *see* Knight, R. A.
Newkirk, T. E. 1646
Newport, C. A. 882
Nicholas, N. 4302, 4303
Nickell, L. G. 3102
Nicol, J. 3145
Nier 840
Nigam, P. C. *see* Bhatnagar, M. S.
Nikander, B., and Tamminen, V. 718
Nikiforuk, K. S., and Sedaševa, G. Ya. 3171
Nikitin, S. A. 4433
Nikoljskiĭ, V. L. 328
Nimmo, M. *see* Wood, R. F.
Niskasaari, E. *see* Gustafsson, C.
Nishida, K. *see* Terazaki, Y.
Nishimoto, K. *see* Inouye, Y.
Niwa, T. 3316
Nixon, G. E. J. 1839
Noakes, D. S. P. 2013
Nohara, Y., and Zinno, Y. 2940
Noisette, A. 1754
Nolan, W. J. *see* Harvin, R. L.
Nolte, H.-W. 1372, 3174
— *see* Klinkowski, M.
Nord, F. F. *see* DeBaun, R. M.
— *see* Kudzin, S. F.
Nordin, V. J. 1325, 1326
Nordmark, O. 1871
Nordström, L. 3758
Norén, B. 3330
Norkrans, B. 1945
Normand, D. 590
—, and Cavaco, A. 1912, 4168
Norris, F. H. 179
Novak, V. 2670
Nowak, A. 1504
Nozeran, R. 70, 71, 72
Nozoe, T., Yasue, A., and Yamane, K. 4426
Nunes, G. Marques 4305
Nunes, J. Rosado 129, 201
Nüsslein 885
Nygard, I. J. *see* Kellog, C. E.
Nygaard, J. 393
Nyholm, I. 258
Nylinder, P. 2412, 3441
— *see* Edgren, V.
Nyyssönen, A. 550, 2337

Oberdorfer, E. 446
O'Brien, J. *see* Miller, P. R.
Occhioni, P. 2406
—, and Souza, A. H. de 3293
— *see* Rizzini, C. T.
Oda, M. 3371
Oechslin, M. 3521
Oey Djoen Seng 2420
Offord, H. R., and Moss, V. D. 404
—, Moss, V. D., and Quick, C. R. 1309
Ogata, Y. *see* Miyoshi, S.
Ögland, N. J., and Emilsson, E. B. 1710
Ogura, T. 4189
—, and Onuma, K. 766, 4358
Oshawa, M., and Abe, Y. 746
Ohta, Y. *see* Inaba, S.
Oikonomopoulos, A. 2646
Oittinen, O. 3276
Okada, T. 2875
Okamoto, K. *see* Suzuki, K.
— *see* Tanimura, T.
Oksa, E. 3057
Oksbjerg, E. 3744
Olenius, L. 3242
Ollagnier, M. *see* Ferrand, M.
Olmsted, C. E. 1960
Olsen, L. P. *see* Gevorkiantz, S. R.
Olson, E. O. 3033
Olson, R. V., and Carlson, C. W. 2224
Ommeren, G. van *see* Gerbranda, G.
Onda, K. 4401
Ono, M., Shibata, N., and Hoshino, H. 2933
— *see* Shibata, N.
Onuma, K. *see* Ogura, T.
Oosten Slingeland, J. F. *see* Goor, C. P.
Oosting, W. 569, 2361
Opaćić, I. 1722
Oppenheimer, H. R. 3663, 3677
Opsahl, W. 2060
Orell, B. L. 1294
Oreškin, S. I., and Baryšnikov, A. 3897
Orlicz, T. 1580
Orloś, H. 2941, 3420
Orlov, M. N. 4241
Orpen, F. L. 979
Orsenigo, M. *see* Baldacci, E.
Ortuño Medina, F. *see* Fernández de Córdoba, L. C.
Osara, N. A. 791
Osborn, R. C. *see* Cline, G. M.
Osborn, R. M. 356, 3261
Osterwald, H. 2513
Ostrander, M. D. 4368
Ostrowski, W., and Hyndle-Szmit, B. 3017
Oswalt, W. 1440
Ota, M. 3327
Otaki, I. *see* Nakano, H.
Otamendi, J. C. 4065
Oudin, A. 3015
Ousbey, J. H. 1573
Oberbaeck, W. *see* Rys, L.
Ovington, J. D. 1026, 2724
Owen, L. O. 3262
Oxenham, J. R. 290
Oyama, N. *see* Kitsutaka, G.
Ozenda, P. 4167
Ozolin, G. P. *see* Rosvkiĭ, V. M.

Pablo 3873
Packman, D. F. *see* Campbell, W. G.
Pagan, C. *see* Hageman, R. H.
Paijmans, K. 3243
Pajchl, J. 3787
Palfrey, G. D., and Roland, A. E. 3082
Pallay, N. 3325
Palm, T. 920
Pálsson, G. 2030
Paludan, F. 3780
Pancirolli, F. *see* Centola, G.
Panda, S. P. *see* Bhat, R. V.
Panjukov, D. N. 279
Panov, A. 144
Panshin, A. J. *see* Day, M. W.
Pant, G. D., and Chatterjee, N. C. 3587
— *see* Roonwal, M. L.

Paolis, D. de 2852
Papy, H. R. 89, 2865
Paramonov, S. J. 925
Pardy, A. A. 1886, 3637
Parente, E. 561
Parfenov, G. M. 3874
Paris, R. 57
—, and Moyse-Mignon, H. 4415
Parker, J. 152
Pascoe, T. A., and Scheffer, T. C. 1698
Pašek, V. 507
— *see* Patočka, J.
Patel, C. B. *see* Hilditch, T. P.
Patel, M. K., Bhatt, V. V., and Kulkarni, Y. S. 3094
Paterson, J. J., and Shanks, G. L. 3940
Patočka, J. 3169, 3170
—, and Pašek, V. 2757
Patrone, G. 543, 549, 2344
Patterson, A. E. 1781
—, and Colson, J. H. 3195
Patton, R. F. 3055
Paul, B. H., and Sweet, C. V. 1681
— *see* Wilde, S. A.
Paul, W. R. C. 3000
Paula, R. D. de Garcia 3025
Pauley, S. S. 955, 1042
Pavari, A. 1117, 4478
Pavlychenko, T. K. 399
Pawsey, C. K. 1153
Peace, T. R. 324, 1320
Pearson, A. A. 91
Pearson, A. J. *see* Neale, F. R.
Pearson, G. A. 18
Pearson, R. G. 4193
Pechmann, H. von 3428
Peck, E. C., and Selbo, M. L. 1585
— *see* Bell, E. R.
Pedro, E. R. 1756
Pedro, S. de 780
Peevy, F. A. 314, 1207
Pejoski, B. 815, 1727, 1728, 1729, 4422
Pellegrini, A. 2376
Pelly, R. S. 1577
Pelton, J. R. 122, 399
Pendlebury, C. L. 2099
Pendleton, R. L. *see* Semple, A. T.
Penistan, M. J. 2139
Pepper, J. M., Brounstein, C. J., and Shearer, D. A. 1530
Percival, E. G. V. *see* Ballou, C. E.
— *see* Campbell, W. G.
Pereira, J. Aranha 732
—, and Mainieri, C. 3279, 3373
Pereira, O. Duarte 3952
Perez-Urruti y Villalobos, J. A. 1828
Perfilov, M. A. 3900
Perilä, O., and Roschier, H. 1702
Perišić, M. 4004
Perkitny, T. 3318, 3399
—, and Chudziński, Z. 3406
—, and Wnuk, M. 3378
—, Wojciechowski, E., and Wnuk, M. 3449
Perrier de la Bathie, H. 134
Perry, J. P. 4049
Perry, T. D. 689, 3365
Pesante, A. 283
Pestal, E. 1272, 3916
Peteri, R. 4375
Petersen, B. B. 449
— *see* Jørgensen, E.
Peterson, A. 3586
Peterson, L. O. T. 466, 505, 3158
—, and Hammond, F. R. 481
Peterson, R. W. 1568, 2387
Peterson, S. F. *see* Dosen, R. C.
Petrini, S. 544, 2357
— *see* Lindquist, B.
Petrov, P. E. *see* Dolgopolov, N. P.
Petterson, H. 2340
Pettersson, S. *see* Gustafsson, C.
Pfeffer, A. 1389
Pfort, E. 1100
Phelps, V. H. 2017
Philippis, A. de 7, 126, 891, 1974
Phipps, D. L. 1259
Piccarolo, G. 1199
Pichon, M. 1900
Pickel, D. B. José 3640
Pickren, J. H. 4319
Pierce, R. S. 2733
Piipponen, H. 772
Piir, A. I. *see* Čikov, Ja. I.
Pillow, M. Y. 635, 4190
— *see* Akins, V.
Pimentel, A. A. Lopes 2261
Pinchin, R. D. 1171
— *see* Wood, R. F.
Pinto, R. W. 2182
Pinto-Lopes, J. 743
Pipan, R. 2999
Pirjatinskiĭ, A. L. *see* Bardyšev, I. I.
Pirone, P. P. 3115, 3950
Pisapia, N. de 2622
Pisarska, M. 2712, 4474
Pisek, A. 3942
—, and Tranquillini, W. 65
Pison y Nebot, M. M. de 2003
Place, I. C. M. 954, 4095
Plaisance, G. 1799
Planhol, X. de 2624
Plank, H. K., and Hageman, R. H. 754
Plass, W. T. 3817
— *see* Merz, R. W.
Plath, E. 2473
Pleasonton, A. *see* Baldwin, H. I.
Plessis, C. P. du *see* Scott, M. H.
Plouvier, V. 56, 829, 3595, 3600
Plumb, G. H. 2293
Podelmengo, O. 1082
Podhorski, I. 248, 1161
Poel, L. W. 140
Poerck, R. A. de 949
Poggi, R. 827
Poilleux, C. 2708
Pokorný, J. 3636
Polduškin, G. N. 3923
Poledica, D. 894
Poljak, A. 1535
Poljakov, Ju. A. 1039
Polnar, M. *see* Vincent, G.
Položencev, I. P. *see* Položencev, P. A.
Položencev, P. A., and Položencev, I. P. 942
Polster, H. 66
Polunin, N. 1951
Pomaranov, S. F. 3004
Pomerleau, R. 429, 2262
Pond, T. M. 2193
Poole, A. L. 127, 132, 3622
Poole, J. R. M. 3390
Portères, R. 1067, 3480
Poskin, A. 1119
Potter, H. S., Weitzman, S., and Trimble, G. R., Jr. 2968
Potzger, J. E. *see* Blewett, M. B.
— *see* Reynolds, W.
Poucques, M.-L. de 77, 1917
Pond, C. E. 2085
Pourtet, J. 203, 236, 283, 1919
—, and Turpin, P. 3742
— *see* Guinier, P.
Pöyhönen, K. 568
Prasad, B. N. *see* Narayanamurti, D.
Prasad, J. 870, 2132, 2419
Prasad, N., Mehta, P. R., and Lal, S. B. 3984
Pratt, G. H., and Dean, A. R. 4359
Pratt, W. E. 4281
Pratten, F., and Woodland, W. A. 664
Pravdin, L. F. *see* Sukačev, V. N.
Prax, J. 386, 2677
Prebble, M. L. 459
—, *et al.* 459
—, and Bier, J. E. 3938
Prell, H. 495
Prentice, R. M. 50, 2299
Preston, A. P., and Barlow, H. W. B. 1212
Preston, R. D. *see* Wardrop, A. B.
Preston, S. B. 3381
Pridham, A. M. S. 3076
Příhoda, A. 434, 444, 3093, 3123, 3124
Prime, C. T., and Deacock, R. J. 2793
Prince, J. B. 2387
Pring, N. G. 2112
Pringle, S. L. 4464
Prochownik, S. 3411
Prodan, M. 1414, 3236
Prokofjev, B. M. 3924
Pronin, D. T. *see* Dosen, R. C.
— *see* Wilde, S. A.
Prothero, R. M. 860
Prusinkiewicz, Z. 3572
Pryor, L. D. 964, 1875, 1876
Pulver, W. 724
Puri, G. S. 1027, 1055
—, and Gupta, A. C. 29
Purushotam, A. 2566
Purves, C. B. *see* Read, D. E.
Purvinj, P. I. 2959
Putkisto, K. 371, 3887
Putnam, J. A. 176, 2360
— *see* Guttenberg, S.
Pylvänen, P. 3049

Qadri, M. A. H., 458, 488, 2562, 3133
Quate, G. S. 345
Quattrocchi, G. 851
Queer, E. R. *see* Joy, F. A.
Queiroz, J. de B. Rodrigues 1111
Quentin, L. *see* Stehlé, H.
Quick, C. R. *see* Offord, H. R.
Quimba, G. P. *see* Tischler, N.
Quint, P.-L. 2324
Qureshi, I. M. 2180
Qvist, A. 4465

Rabeler, W. 1821
Rabouille *see* Lefebvre
Radcliffe, D. N. 3689, 4029
Rafi, M. 881
Ragonese, A. E., and Castiglioni, J. A. 3855
Rahteenko, I. N. 142
Rainio, P. *see* Jensen, W.

Raison, M. *see* Mangenot, G.
Rakoen, M. P. 2081
Rakušček, K. 2936
Ralph, B. J. F. *see* Kurth, E. E.
Ralston, C. W. 1432
Ralston, R. A. 2016, 2845
Ram, B. S. 124, 857, 2174
Ramaswami, M. N., and Gowda, D. R. 3764
—, Gowda, D. R., and Krishnamoorthi, R. 2183
Rambo, W. H., and DeRice, H. A. 4234, 4377
Rånby, B. G. 4210
Randall, A. P. 4048
Ranganathan, V. *see* Narayanamurti, D.
Rao, P. S. 3504
Rao, S. R. 2108
Rappard, F. W. 464, 508, 2896
Räsänen, K. A. 4466
Rasinger, E. 2348
Raskatov, P. B. 1860
Rasmussen, E. P., *et al.* 3443
Ratliff, F. T. 725
Ratnam, C. V. S. *see* Kurth, E. F.
Ratra, R. S. *see* Narayanamurti, D.
Rault, J. P., and Marsh, E. K. 4364
Rausch, A. 2220
Rave, D. 4122
Rawat, A. S. 395, 1421
— *see* Kadambi, K.
Rawitscher, F. 3719
Rawlings, G. B. 1030, 1399
Ray, D. L., and Julian, J. R. 2558
Ray, P. K. 2836
Ray, R. G. 1753
Raymond-Hamet 2631
Razi, B. A. 1982
Razous, P. 2489
Rea, J. L., Jr. *see* Hughes, R. H.
Read, D. E., and Purves, C. B. 4206
Read, R. A. 2995, 3678
Redmond, D. R. 2790, 2791
Reed, J. M., and Reid, J. S. 4191
Reeks, W. A. 1374
—, and Barter, G. W. 1404
Reginster, P. 3712, 3779
Rehman, A. 2971
Rehman, M. A. 3444
—, and Kishen, J. 2522
Reichenstein, E., Dahms, K., and Lesohner, F. 2375
Reichstein, T. *see* Bally, P. R. O.
Reichert, I., and Chorin, M. 3998
Reichert, T. 3317
Reichling, L. 128, 1058
Reid, J. S. 592, 1599, 1667, 2585
—, and Mitchell, M. T. 4367
—, and Wilson, M. E. 4231
— *see* Entrican, A. R.
— *see* Reed, J. M.
Reigner, I. C. 2746
Reinders, E. 611
Reinders-Gouwentak, C. A. 615, 616
Reineke, L. H. 655
Reinhold, M. 2329
Reissinger, G. 1252
Remussi, C. 3505
Rennels, R. G. 3165
Rennerfelt, E. 2555
—, and Starkenberg, B. 1639
— *see* Lekander, B.
Rennie, P. J. 1028, 1128, 3750
Renon 2227
Rensburg, H. J. van 3522
Renteln, H. von 2610
Řešetov, A. C. *see* Miller, M. S.
Řetovský, R. *see* Zelinková, M.
Rex, E. G. *see* Liming, O. N.
Reynolds, R. 1465
Reynolds, R. R. 2992
Reynolds, W., and Potzger, J. E. 1932
Rhoads, A. S. 1332
Riaz, A. G., and Habib Khan, M. 40
Ribaldi, M. 438, 445
Ribeiro, J. Pinto, and Guerreiro, M. Gomes 1905, 3654
Rich, S. 3088
Richards, C. A. *see* Baechler, R. H.
Richards, E. G. 3275
Richards, I. T. 2550
Richardson, J. F. *see* Burgoyne, J. H.
Richardson, S. D. 2245, 2704, 3067
— *see* Wassink, E. C.
Richmond, H. A. 459
Ride, M. *see* Busnel, R.-G.
Riesco, J. *see* Dantin-Gallego, J.
Rietz, R. C. 1503, 1672, 4340
Rifé Lamprecht, M. P. *see* Najera y Angulo, F.
Rigaud, A. 3827
Righter, F. I., and Duffield, J. W. 84, 961
Riker, A. J. *see* Beckman, C. H.
— *see* Kuntz, J. E.
— *see* Struckmeyer, B. E.
Riley, C. G. 423, 2254
Riley, T. E. 4114
Riley, W. S. *see* Kramer, P. J.
Rimskiĭ-Korsakov, M. N., and Gusev, V. I. 456
Ring, W. C. *see* Mottet, A. L.
Rischen, H. W. L. *see* Broese van Groenou, H.
Rishbeth, J. 426, 1329, 2256, 3095
Risi, J. 778, 782, 793, 1688, 2608
Ritter, G. J., and Mitchell, R. L. 4183
Rivenq, F. *see* Carles, J.
Rizzini, C. T., and Occhioni, P. 117
Robak, H. 424, 1873
Robert, A. 1841, 2291
Roberto, A. 1751
Roberts, D. A. *see* Weber, G. F.
Robertson, A., Suckling, C. W., and Whalley, W. B. 646
— *see* Badcock, C. G.
Robertson, D. 3824
Robertson, R. N. 1851
Robinson, E. W. *see* DeGrace, L. A.
Robyns, W., and Wilczek, R. 1906
Rodenwaldt, U. 1455, 2850
Rodger, Sir A. 1757
Rodgers, A. D. III. 1750
Rodrigues, A. 4365
Rodwell, C. N. *see* Hills, K. L.
Roe, A. L. 2338, 2339
—, and Boe, K. N. 3796
Roe, E. I. 310, 399, 1307, 3645
Roe, F. W. 4153
Rogers, D. J. 1904
Rogers, E. J. 4117
Rogers, J. S. 3481
—, Calderwood, H. N., and Beebe, C. W. 3483
Rogers, N. F. 2967
Rohmeder, E. 1048, 1956, 3686
Rol, R. 1920, 2267, 2708
Roland, A. E. *see* Palfrey, G. D.
Romano, E. 1365
Ronde, G. 1822
Ronge, E. W. 4451
Ronkanen, A. J. 352
Roonwal, M. L. 457
—, Bhasin, G. D., Pant, G. D., and Misra, S. D. 1837
Roosen, P. 2533
Rosay 204
Rosayro, R. A. de 320, 1054, 1802
Roschier, H. *see* Perilä, O.
Rose, A. H. *see* Belyea, R. M.
Rosevear, D. R., and Lancaster, P. C. 3720
Ross, M. I. 1966
Ross, W. 620
Roth, C. 2314
Roth, E. R. 2263
Rothé, P. L. 2380
Rothrock, C. W., Jr. *see* Harvin, R. L.
Rothwell, W. 3410
Rouleau, E. 1921
Roulston, L. C. *see* Armstrong, W. N. B.
Roussel, J. *see* Roussel, L.
Roussel, L. 135
—, and Roussel, J. 3558
Roussignhol, C. 2706
Rovskiĭ, V. M., Ozolin, G. P., and Solovjeva, A. I. 272
Rowe, P. B., and Colman, E. A. 2743
—, and Hendrix, T. M. 2744
Roy, B. K. D. *see* Saikia, B.
Roy, S. K., and Kar, B. C. 2487
Royce, C. K. 709
Royen, P. van, and Steenis, C. G. G. J. van 2806
Rubner, K. 218
Rudd Jones, D. 1328, 1338
Rudnicki, J. M. 2387
Rudolf, P. O. 275, 2298
— *see* Christensen, C. M.
Rule, J. R. *see* Wagner, P. L.
Rummell, R. S. 2171
— *see* Garrison, G. A.
Rummukainen, U. 3751
Runckel, W. J. *see* Anderson, A. B.
Runeberg, L. 2373
Runkel, R. O. H. 1543
—, and Wilke, K.-D. 3324
Runquist, E., and Stefansson, E. 1151
Runquist, E. W. 1043
Rupf 198
Rusanov, F. N. 329
Ryan, V. A., and Cooke, G. B. 1235
Rycroft, H. B. 3574
Ryker, T. C. *see* Gertsch, M. E.
Ryle, G. B. 922
Rymer, K. W. 1485
Rys, L., Aron, G., and Overbaeck, W. 4379
Ryvkin, B. V. 2305
Ryžkov, S. V. 1081

S., C. L. 379
S., E. E. 1936
Sá Nogueira, G. de Barros de 1975
Saalas, U. 2758
Saarela, M. O. *see* Kivelä, A.
Saatçioğlu, F. 2899, 4476
Sabet, K. A. 3994

Sabharwal, L. R. 862
Sacchi, G. 2367
Sachs, A. von 574
Sacht, H.-J. 690
Sackston, W. E. 399
Sadgopal and Varma, B. S. 3477
Saemundsen, E. G. *see* Bjarnason, H.
Šafar, J. 2976, 3679
Saget, J.-G. Y. 4309
Sagoschen, J. A. 1717
Sagreiya, K. P. 862, 3832
Saharov, M. I., and Saharova, N. M. 1029
Saharova, N. M. *see* Saharov, M. I.
Said, M. 881, 2859
Saikia, B., Das, P. K., and Roy, B. K. D. 2638
Sainmont, C. 1679
Saitō, Y. 2783
Sakaguti, K., and Yamaji, K. 2947
Sakornbut, S. S. 785
Saks, E. V. 349, 2498, 2499
Saldarelli, R. 1182
Salkeld, E. H. 1368
Salwén, N. 551, 3934
Sammi, J. C. 2351
Sampaio, J. Salazar 572
Samset, I. 3881
Samsonova, G. A. *see* Menjšikov, G. P.
Samuelson, D. 3263
Sandermann, W. 2481, 2605, 4147
—, and Jonas, G.-Z. 2541
—, Schärfe, E., and Froede, O. 1620
Sangar, O. J. 1214
Sannikov, V. S. 3005
Santos, J. Brito dos 85
Santos, N. Ferreira dos 141
Savarí Cisneros, R. 1334
Sardinha, A. Manuel, 3500, 4149
Sarich, B. R. 4449
Sarkanen, K. *see* Gustafsson, C.
Sarvas, R. 186, 2059, 2501
Sasaki, T., and Watanabe, K. I, 6
Sass, S. *see* Fehér, D.
Sato, T. *see* Iizuka, H.
Sato, Y. 242
—, Miyakoshi, M., and Muto, K. 2819
—, and Muto, K. 2820, 2821
Satoo, O. *see* Miura, I.
— *see* Shibamoto, T.
— *see* Toda, R.
Satoo, T. 63, 2765
Satoo, Y. *see* Miura, I.
Savard, J. 2429
—, and Espil, L. 2614, 2615
Savaş, K. *see* Diker, M.
Savi, L. *see* Giuliani, R.
Savina, A. V. 4433
Savory, J. G. *see* Mack, G. W.
Sawada, K. 413, 3119, 3971
Scales, G. M. 2475
Scamoni, A. 2897, 2903
Scandura, A. 3526
Scaramuzza, L. C. 197
Scaramuzzi, G. 516
Ščepotjev, F. L. 73, 86
Ščerbačev, V. D. 3249
Ščerbakov, A. P. 3606
Schad, C. 2708
Schaefer, W. 4198
Schaeffer, A. *see* Schaeffer, L.
Schaeffer, L. 1447
—, and Schaeffer, A. 1216
Schafer, E. R., and Hyttinen, A. 3460
Schaffner, J. V., Jr. 2309
Schaller, L. D. 1129
Schärfe, E. *see* Sandermann, W.
Schaub, C. 3351
— *see* Andersson, J.
Scheffer, T. C. *see* Pascoe, T. A.
Schenkenberg van Mierop, H. W. 854
Scheye, K. G. 1470
Schick, H. 1257
Schiller, H. 3430
Schilling 1785
Schimitschek, E. 4038
Schindler, U. 1280, 4043
Schlittler, E., and Gellért, E. 1726
Schmid, E. 1059
Schmidt, E. 596, 1487, 2390, 3285
Schmidt, E. L., and Starkey, R. L. 31
Schmidt, G. D. 2881
Schmidt, H. 2568, 2571, 3616
Schmutterer, H. 2754, 3154
Schnell, R. 171
Schnell, R. L. *see* Conway, E. M.
Schober, R. 539
Schofield, J. A. 734
Scholten, J. A., and Molander, E. G. 2514
Scholz, H. F. *see* Youngberg, C. T.
Schönbach, H. 1785, 2774
Schou, L. 1856
Schrader, O. H., Jr. 583
Schread, J. C. 2313, 4061
Schreiner, R. E. *see* Joy, F. A.
Schröck, O. 2928
Schroth, D. *see* Wacek, A. von
Schubert, G. H. *see* Fowells, H. A.
Schubert, W. J. *see* DeBaun, R. M.
Schuch, K. 3415
Schuerch, C., Jr. 3335
Schuitemaker, J. P. 2659
Schulenberg, A. F. v. d. 3745
Schuldt, P. H. 4000
Schultes, R. E. 1923
Schulz, F. 625, 4255
Schulz, G. 4335
Schulze, B. 1630, 4323
—, and Stamer, J. 1617
—, and Theden, G. 1619, 1628
— *see* Becker, G.
Schüte, K. 1036
Schwab, F. 238
Schwartz, H. 2387
— *see* Clermont, L. P.
— *see* Glennie, D. W.
Schwartz, S. L., and Baird, P. K. 783
Schweisheimer, W. 4227
Schwend, C. 2866
Schwerdtfeger, F. 198, 474, 503, 885
Scott, A. W. *see* Hendry, R.
Scott, C. W. 2988
Scott, D. R. M. 3566
Scott, D. S., and Gardner, J. A. F. 4404
Scott, J. D. 3522
Scott, M. H. 1476, 1604
—, and Plessis, C. P. du. 1512
Scoupe, C. 2062
Seabra, L. de 3455, 3456
—, and Ferreirinha, M. P. 2604
Seabra, L. S. V. de 1689
Šebenik, M. 439
Sedaševa, G. Ya. *see* Nikiforuk, K. S.
Seekamp, H. 1645
Seem, M. *see* Klem, G. G.
Seide, P. *see* Hubka, R. E.
Seifert, J. 3567
Seip, H. K. 3198
Seitz, F. W. 1868, 3687
Seker, F. 1761
Selbo, M. L. 670, 1570
— *see* Peck, E. C.
Selivanov, P. A. 3929
Seljugin, N. S. 759
Seitz, F. W. 3687
Sellars, K. *see* King, F. E.
Sempio, C., 427, 435
Semple, A. T., and Pendleton, R. L. 1218
Senni, L. 232
Seperovič 2905
Seredin, R. M. 1953
Serevo, T. S. 4069
Serrano, S. *see* Vicente Arboleda, J.
Servazzi, O. 3111
Šešukov, N. G. *see* Kolesnikov, S. N.
Sgerm, F. 4085
Shanklin, J. F. 834
Shanks, G. L. *see* Paterson, J. J.
Sharma, A. R. 2146
Sharma, V. N. *see* Bhandari, P. R.
Shaw, A. C. 1733, 4425
Shaw, C. G., Fischer, G. W., Adams, D. F., and Adams, M. F. 2225
Shaw, J. 705
Shaw, R. G. 1270
Shawki, M. K. *see* Jackson, J. K.
Shearer, D. A. *see* Pepper, J. M.
Shelford, V. E. 53, 4352
Shenefelt, R. D. 1388
— *see* Simkover, H. G.
Shephard, H. H. 2284
Shephard, R. *see* Graham, K.
Shepherd, R. F. *see* Hensen, W. R.
Sherlock, F. E. 1556
Sherman, G. D. *see* Fujimoto, G.
Shibamoto, T., Minami, K., and Miyazaki, M. 812
—, and Nakajima, Y. 2726
—, and Satoo, O. 790
—, Takahara, S., and Kawana, A. 139
— *see* Miura, I.
Shibata, N., Ibaragi, T., and Ishii, M. 2727
—, Ono, M., and Hoshino, H. 2934
— *see* Ono, M.
Shiino, S. M. 1650
Shimada, K. *see* Inaba, S.
Shimaji, K. *see* Inokuma, T.
Shimazaki, Y. *see* Maeda, T.
Shipley, G. B. 731
Shipp, M. H. R. *see* Kurth, E. E.
Shirley, J. C. 2656
Shiroya, T. *see* Hattori, S.
Show, S. B. 834
Shraeder, W. D. 2728
Shu-Chien, S. *see* Wilson, S. D.
Shutak, V. G., and Christopher, E. P. 720
Shutts, C. F. 3564
Šibalov, V. I., and Milov, S. G. 4362
Sidorenko, A. T. 2079
Siebert, W. *see* Freudenberg, K.
Siegmund, D. 3128
Siggers, P. V. 416
Siimes, F. E., and Johansson, P. E. 1600

Sillans, R. 2630, 3651, 4420
Silva, J. A. de 2141
Silver, G. T. 2295
Silvy-Leligois, P. 3247
Šimák, M. 1422
Šimanjuk, A. P. 2872
Simes, J. J. H. 651
Simkover, H. G., and Shenefelt, R. D. 1366, 4019
Simmonds, F. A., and Kingsbury, R. M. 4393
Simmonds, F. J. 411
Simmonds, N. W. 3019
Simms, D. L. 3417
Simola, P. 3042
Simón y de Simón, E. de 1276
Simonsson, Å. *see* Andersson, J.
Simpson, L. J. 4047
Simskiĭ, A. M. 1314
Sing, D. P. 1245
Singh, C., and Guha, S. R. D. 2593
Singh, J. 169
— *see* Narayanamurti, D.
Singh, K. P. 2104, 2110
Singh, M. M. *see* Bhat, R. V.
Singh, P. 3831
Singh, R. *see* Narayanamurti, D.
Singhal, R. M. 370, 2077
Sinickiĭ, V. P. *see* Besser, A. A.
Sinnott, E. W. 2411, 4173
Sipkens, D. 4105
Sircar, M. K. *see* Mehra, P. N.
Sirén, G. 4112
Šiškov, I. I. 2020
Sisley, C. 3432
Sjavcillo, S. V., and Danilina, A. F. 3321
Sjöquist, C. A. 1471
Skärby, R. G. 3244
Skog, R. E. 2119
Skoglund, C. 1551
Skoog, F. *see* Loewenberg, J. R.
Skorodumov, A. S. 2699
Skottsberg, C. 2864
Skov, L. *see* Crossley, D. I.
Skrjabin, M. P. 997
Šlander, J. 912
Slavuckiĭ, I. I. *see* Karavaev, V. I.
Sławiński, W. 131, 1499
Slipp, A. W. 441
Slocum, G. K. 1174
Smeathers, R. 1500
Smith, A. C. 3653
Smith, C. A. 982
Smith, C. C. 477, 487, 510
—, and Barter, G. W. 485
Smith, C. M. 3696
Smith, D. N. 192
Smith, F. F. 2135
Smith, H. H. 4357
Smith, J. 17
Smith, J. H., and Carr, D. R. 1616
Smith, J. H. G. *see* DeGrace, L. A.
Smith, L. F. 3840
Smith, N. F. *see* Engle, L. G.
Smith, R. 2742, 3573
Smith, R. C. 3219
Smith, W. J. 1664
Smitt, A. 2027
Smythies, B. E. 359, 3888
Snow, A. G., Jr. 3014, 3863
— *see* Clements, R. W.
Snyder, T. E. 1661
Soane, G. E. *see* Lacey, P. M. C.
Sobrinho, J. Soubihe *see* Malavolta, E.
Söderström, N., and Lundin, L. 3775
Soest, J. van 518
Sokolova, O. K. *see* Voronkov, P. P.
Šolaja, B. 3495
Solignat 2708
—, and Venot 3792
Soljanik, I. 234, 250, 977, 3810
Solovjeva, A. I. *see* Rovskiĭ, V. M.
Somerville, J. L. *see* Neale, F. R.
Somes, H. A. *see* Little, S.
Sorauer, P. 3937
Sörensen, H. A. *see* Barton, D. H. R.
Sørhuus, K. 2679
Soriano, A. 1076
Sormani, M. 2708
Sorsa, B. 3367
Sortdal, K. K. 3777
Sosa, A. H. 858
Šošin, N. A. *see* Bobkov, N. P.
Soulillou, A. 1550
Sousa, A. de F. Gomes e 4150
Souza, A. H. de *see* Occhioni, P.
Spaeth, J. N., Walters, C. S., and Kulp, D. A. 4086
Špalek, V. 251
— *see* Vincent, G.
Spear, G. A. 1448
Speer, J. 1425
Speidel, G. 3235
Spiecker, M. *see* Laer, W. von
Spilhaus, M. W. 983
Spiller, D. 751, 1655, 1656, 2539
Špiranec, M. 861, 2833
Spitkovskiĭ, Z. M. 4355
Spitta, M. W. 1229, 3857
Srivastava, H. C. *see* Mukherjee, S.
Srivastava, T. N. 1145, 3081
Ssorin, V. A. 2873
Stacey, W. A. 676
Staheĭko, F. G. 249
Stahelin, R. 3804, 3956
Štajduhar, F. 717
Stalker, H. D. *see* Carson, H. L.
Stallings, J. H. 2748
Stamenković, B. 4139
—, and Vuković, B. 4271
Stamer, J. *see* Schulze, B.
Stamm, A. D. 2384
—, and Tarrow, H. 3319
Stamm, E. P. 354
Stamper, E. R. *see* Gertsch, M. E.
Staniforth, D. W. 1307
Stankevič, P. *see* Krstič, M.
Stanley, B. G. *see* Murray, J.
Stapleton, C. C. 318
Starčević, J. 358
Stark, R. W. 3159, 4025
Starkenberg, B. *see* Rennerfelt, E.
Starkey, R. L. *see* Schmidt, E. L.
Starr, W. A., and Wheeting, L. C. 1770
Stather, O. 3360
Staudacher, E. 2512
Stearns, F. 177
Stearns, J. L. 4163
Stebbing, E. P. 1823, 3507
Stebbins, G. L., Jr. 3610
Stebnicka, E. *see* Janiczek, M.
Stecki, K. 2781
Steeden, H. *see* Anderson, H.
Steenis, C. G. G. J. van *see* Royen, P. van
Stefansson, E. 2049, 3757
— *see* Runquist, E.
Stefánsson, V. 2668
Stegmann, G. *see* Klauditz, W.
Stehlé, H., Stehlé, M., and Quentin, L. 987
Stehlé, M. *see* Stehlé, H.
Stein, W. I. 1166
Steinbach, H. O. 1851
Steinbrenner, E. C. 2721
Steiner, A. J. 2415
Steiner, W. 2683
Steininger, A. *see* Kisser, J.
Steinlin, H. 2202
Stentzel, E. E. 1126, 3029
Stephen, A. M. 822, 4219
Stephens, P. R. 2098
Stephenson, J. R. *see* Arend, J. L.
Stermitz, R. E. 2583
Stern, E. G. 665, 666, 3361, 3362, 3363, 4247
Sternitzke, H. S., and James, L. M. 1248
Stessel, G. J. *see* Curl, E. A.
Steven, H. M. 2151, 2152, 2645
Stevens, W. C. 1673
Stewart, C. M., Foster, D. H., Cohen, W. E., Leslie, R. T., and Watson, A. J. 4201
Stewart, D. M. 1323
Stewart, D. W. R. 1298
Stewart, G. I. 3064
Stewart, R. R. 2795
Steyermark, J. A. *et al.* 986
Stilling, F. I. 391
Stillinger, J. R. 632
Stoate, T. N. 3721, 3949
Stockman, L. *see* Adler, E.
Stoddart, L. A. 834
Stoeckeler, J. H. 255, 263, 1209, 2066, 3734
—, and Heinselman, M. L. 450
—, and Limstrom, G. A. 1172
—, and Stoltz, E. R. 2317
Stoehr, H. A. 1113
Stoffels, A. 519, 2319
Stojanov, C., and Enčev, E. 1498
Stoker, R. L. *see* Tauxe, G. J.
Stoltz, E. R. *see* Stoeckeler, J. H.
Stone, E. C., and Juhren, G. 1955
Stone, E. L., Jr. 1943
Story, R. 130
Stover, W. S. 2378
Strader, J. D. 3951
Strand, L. 3217, 3557, 3615
Stranks, D. W. 4394
Stratonovič, A. N. 4433
Stratonovič, N. H. 4433
Strawiński, K. *see* Karpiński, J.
Streater, H. *see* Ibberson, J. E.
Strehlke 198
Streyffert, T. 4127, 4142
Strickland, E. H., and Hocking, B. 1360
Stridsberg, E. 2346
Strojin, F. 1690
Strømsøe, B. 3683
Strong, F. C. 3784
Struckmeyer, B. E., and Riker, A. 442
Strugger, S., and Baumeister, W. 939
Stucky, H. E. 399
Suarez de Castro, F. 2165
Subramanyan, N. *see* Narayanamurti, D.
Süchting, H. F. 20
Suckling, C. W. *see* Robertson, A.
Sudiro, M. *see* Alphen de Veer, E. J. van
Suggit, J. W. 398, 2553, 3074

Sukačev, V. N. 4433
—, and Pravdin, L. F. 4433
Sullivan, C. R. *see* Green, G. W.
— *see* Wellington, W. G.
Sumida, Y. 1063
Sundberg, U. 361
Sundman, J. *see* Gustafsson, C.
Surber, E. 125
Surdam, E. 2232
Susmel, L. 607, 706, 1088, 2159, 3322, 3730, 4230
Šušteršič, M. 517
Suzuki, K., Nagata, J., and Okamoto, K. 1496
Suzuki, T., and Hatiya, K. 1064
Suzuki, Y. 622, 623, 2423
Sviridenko, P. A. 1168
Svoboda, P. 96, 3312
Swabey, C. 4441
Swaine, G. 3178
Swanson, C. L. W. 3565
Sweet, C. V., and Fobes, E. W. 775
— *see* Paul, B. H.
Swingle, R. U. 430
Sylvester, E. P. 399
Szabó, E. *see* Fehrer, D.

T., A. 3955
Tachi, I., Kimura, Y., and Yamamoto, A. 3364
Tack, G. W. *see* Dalton, L. K.
Täckholm, V., and Drar, M. 1881
Takahara, S. 1157
— *see* Shibamoto, T.
Takahashi, N. 2884
Takahasi, Y., and Ito, C. 3177
Takakuwa, T. *see* Iizuka, H.
Takeda, H. 87
Takeda, S. 2747
Takiguchi, K. *see* Kawaguchi, T.
Tallantire, P. A. *see* Godwin, H.
Tamate, S. *see* Iizuka, H.
Tamblyn, N., and Kent, N. E. 2569
— *see* Dalton, L. K.
— *see* Dadswell, H. E.
— *see* Kneale, R. E.
Tamm, C. O. 61, 1810, 1849, 1976
Tamm, O. 531
Tamminen, V. *see* Nikander, B.
Tandon, I. N. *see* Lal, A.
Tanimura, T., Nagata, J., and Okamoto, K. 698
Tannehill, G. F. 2014
Tanšek, J. 278
Tarkow, H. *see* Stamm, A. J.
Tarrant, R. F., Isaac, L. A., and Chandler, R. F., Jr. 2730
Tatto, L. 3382
Tauxe, G. J., and Stoker, R. L. 2240
Taylor, R. F. 3536
Taylor, Sir W. L. 1791
Tehon, L. R. 1724
Teivanen, L. 167
Telford, C. J. 3375, 4274, 4278
Templeman, W. G. 1851
Terasita, T. *see* Akai, S.
Terasmäe, J. 1864
Terazaki, Y., and Nishida, K. 2993
Tersmeden, C. 3520
Terzić, D. 1239
Testi, G. D. 2943
Teves, D. *see* Haas, H.
Thalassinos, D. 2669
Thalenhorst, W. 3186
Theden, G. 1618
— *see* Schulze, B.
Thielecke 1785
Thiemann 484
Thimann, K. V. 405
Thoday, D. 946
Thode, E. F., and Lee, Y. H. 2595
Thomas, A. M. *see* Carruthers, J. F. S.
— *see* Knight, R. A. G.
Thomas, A. V. 1477, 2395
Thomas, B. R. *see* Brandt, C. W.
Thomas, J. E. *see* Kuntz, J. E.
Thomas, L. R. *see* Johnson, C. E.
Thomas, M. D. 1851
Thompson, A. P. 4461
Thompson, B. T. 1233
Thompson, G. E. 3112
Thompson, J. M. 951
Thompson, T. S. 4448
Thompson, W. R. *et al.* 1363, 3136
Thomson, M. G. 494
—, and Walters, J. 2307
Thorkildsen, R. 2063, 3799
Thornton, B. J., and Bohmont, D. W. 401
Thorold, C. A. 3972
Thunell, B. 1473, 4239
—, and Forsberg, P. 2464, 2465
—, and Hiltscher, R. 2466
Thurmond, A. K. 1578
Tideman, P. 524
Tiemann, H. D. 1475
Timell, T. E., and Jahn, E. C. 3339
Tirén, L. 2019
Tischler, G. 1869
Tischler, N., Bates, J. C., and Quimba, G. P. 396
Titman, P. W. 606
Toda, R., and Satoo, S. 269
Todd, A. R. *see* Bick, I. R. C.
Todd, J. M. 1348
Todorović, D. 4106
Tokushige, Y. 3125
Tomašegović, Z. 1449
Tompkins, J. 2470
Tondeur, G. 1830
Toole, E. R. *see* Hepting, G. H.
Torgeson, D. C. 2257
Torkildsen, G. B. 1949
Tortorelli, L. A. 3533
—, and Castiglioni, J. A. 2810
Toyama, S., and Yamaji, K. 270
Traĭteljman, G. Ja. 4279
Tranquillini, W. *see* Pisek, A.
Trayer, G. W. 3535
Treccani, C. P. 940
Trepp, W. 1052
Trimble, G. R., Jr. *see* Potter, H. S.
Tropin, I. V. 3155
Troščanin, P. G. 1322
Trosjko, I. K. 1086
Troup, R. S., and Jones, E. W. 2869
Troupin, G. 1908
Trousdell, K. B. 2911
Trouvelot, B. 2708
True, R. P. *see* Tryon, E. H.
Trufanov, A. A. 3927
Truman, R. *see* Hartigan, D.
Tryon, E. H., and True, R. P. 3054
Tschermak, L. 15, 16, 2812
Tuji, T. 3201
Tulstrup, N. P. 223, 224, 253, 257, 3772
Tůma, A. 3755
Tuovinen, A. 351, 2210
Turček, F. 1350, 2840, 3131
Turica, A. 2312
Turnbull, R. F. 4370
Turner, A. J. 2642
Turner, J. R. *see* Armstrong, W. N. B.
Turner, J. S. 1851
Turner, M. R., and Veillon, V. P. 3518
Turpin, P. *see* Pourtet, J.
Turrill, W. B., and Milne-Redhead, E. 2800
Tutin, T. G. *see* Clapham, A. R.
Tyron, L. E. *see* Kulp, J. L.
Tyrrell, K. C. 3430

U Ne Win 3685
U Su 3856
Uemura, S. 2829
Uffer, A. 4411
Ugarte Laiseca, J. 1848
Ugrenović, A. 2526
Uhlíř, P. *see* Lhota, O.
— *see* Mařan, B.
Ukita, T., and Matsuda, R. 4418
Ullén, G. 2326, 3880
Ullrich, H. 3698
Ulrich, A. 1395
Urbanovski, A. 3194
Urbas, J. 209
Ure, J. 535
Urquhart, B. 571, 839, 2689, 4068
Urquijo Landaluze, P. 2708
Ustinovskaja, L. T. 294, 2964

Vaartaja, O. 1958
Vachula, P. 682
Vadehra, S. L. 2166
Váhala, J. 4407
Vahid, S. A. 846, 4458
Valette *see* Lefebvre
Vandenput, R. *see* Ahrens, L.
Vanselow, K. 1443, 2089, 4092
Vanterpool, T. C., and Macrae, R. 1879
Vareschi, V. 3706
Varga, I. *see* Greguss, P.
Varis, T. 567
Varma, B. S. *see* Sadgopal
Varner, R. W., and Krause, R. L. 2535
Varossieau, W. W. 612
Vasconcellos, J. de Carvalho e. 1930, 2697
Vasić, K. 3173
Vasiljev, V. N. 104
Vasiljević, S. 2413
Ve, S. 2856
Veen, B. 271, 2901, 2948
— *see* Goor, C. P.
Veen, R. van der 137
Veh, N. von 3031
Veillon, J. P. *see* Curran, H. M.
Veillon, V. P. *see* Turner, M. R.
Velho, A. 3498
Velho, H. de L. Abreu 1735
—, and Xabregas, J. Lopes 1734
Venet, J. 348, 2137, 2488, 2523
Venkajee, T. 588
Venot 2708
— *see* Solignat
Verdoorn, I. C. 3656
Verey, J. G. 4461
Verghese, J., and Gulati, K. C. 1730
Verleyen, E. J. B. 1154
Verma, S. C. L. *see* Narasimha Rao, P. L.
Vernon, J. W. *see* Findlay, W. P. K.

Verona, O. 2739
Verstegh, F. 4124
Vertebnyĭ, P. I., and Gruzdev, V. A. 4276
Vesey-Fitzgerald, L. D. E. F. 4413
Vialle, J. 2449
Vicente Arboleda, J., and Serrano, S. 1158
Vicioso, C. 1008
Videau, G. 1602
Vidme, T. 2061, 3781
—, and Bylterud, A. 2064
Vieles, P. 2708
Vietinghoff-Riesch, A. von 1358, 4060
Vigerust, A. 2140
Villaxy 2708
Villegas de la Vega, R. 1462
Villière, A. 847
Villiers, P. C. de 1014
Villikka, P. 3926
Vincent, A. B. 2874
Vincent, G., and Korenek, J. 3562
—, Korsuň, F., and Zavadil, Z. 3210
—, Špalek, V., and Polnar, M. 13
Vinciguerra, G. 150
Virmani, K. C. *see* Bhat, R. V.
Virnik, F. 4063
Virot, R. 90
Viswanathan, T. P. 463
Vital, A. F. 4052
Vité, J.-P. 3151
Vité, P. 1281
— *see* Burschel, P.
Vives Comallonga, L. V., and Bardía Bardía, R. 469
Vloten, H. van 2009, 3993
Voegeli, R. 1772
Voevoda, D. K. 3048
— *see* Kovalin, D. T.
Vogel, P. de *see* Boer, S. de
Volodenkov, F. I., and Kožanov, D. I. 3907, 3931
Volpini, C. 4113
Voronkov, P. P., and Sokolova, O. K. 3581
Voropanov, P. V., and Leuhina, T. A. 2818
Voûte, A. D. 3139
Vroom, A. H. 4399
Vrydagh, J.-M. 752
Vujičić, L. 683, 4138
Vuković, B. *see* Stamenković, B.

Wacek, A. 1524
Wacek, A. von, and Schroth, D. 641, 4209
Wadsworth, F. H. 3250
— *see* Marrero, J.
Wagemann Wiedebrug, G. 3292
Wagner, P. L., and Rule, J. R. 1555
Wahlén, N. 3265
Wahlenberg, W. G. 1099
Wakefield, W. E. 2387
Wakeley, P. C. 2054, 2876
Wakeman, C. M. 3430
Wakita, M. 692
Waldock, E. A., Capstick, E. S., and Browning, A. J. 1829
Walker, A. 1744
Walker, F. S. 3731
Walker, R. B. *see* Gessel, S. P.
Walker, R. O. 1306
Walker, V. Y. *see* Kloot, N. H.
Wallace, T. 2221
Waller, S. *see* Gregory, P. H.
Wallner, O. 883, 884, 3548
Walter, R. 350
Walters, C. S. 736, 2952
—, and Fox, H. W. 2459
—, Fox, H. W., and Wycoff, H. B. 3395
—, and Kulp, D. A. 739, 740
—, Kulp, D. A., and Fox, H. W. 738
—, and Meek, W. L. 2546, 2547, 2548, 3409
— *see* Spaeth, J. N.
— *see* Thomson, M. G.
Walters, W. 3068
Walton, A. B. 2676
Walton, C. L. 4386
Walton Smith, F. G. 3430
Wampole, J. H. *see* Mohler, L. L.
Wang, T. H. *see* Haagen-Smit, A. J.
Warakomska, Z. 1852
Warburg, E. F. *see* Clapham, A. R.
Warburton, J. A. 2580
Warcup, J. H. 1142, 3769
Ward, R. K. 2248
Wardlaw, C. W. 1851
Wardrop, A. B. 4169
—, and Dadswell, H. E. 1532, 2409
—, and Preston, R. D. 1493
— *see* Foster, D. H.
Wareing, P. F. 136, 1859
Warren, G. L., and Whitney, R. D. 1386
Warwick, A. J. *see* King, F. E.
Wassink, E. C., and Richardson, S. D. 3682
Wassink, J. T. 37
Watanabe, H. *et al.* 3035
Watanabe, K. *see* Sasaki, T.
Watanabe, M. 1511
—, and Chen, L. C. 1510
Watanabe, R. *see* Kawaguchi, T.
Waterhouse, J. 2521
Watson, A. J., and Higgins, H. G. 687
— *see* Stewart, C. M.
Watson, C. A. 1700
Watson, W. M. 1307
Watt, J. M. 966
Watt, R. F. 380
Watt, W. E. 2702
Watts, L. F. 834, 2169
Wauthoz, V. 3179
Way, M. J. 2289
Weaver, H. 394
Webb, B. E. 1275, 4273
Webb, F. E. 4027
—, and Forbes, R. S. 1401
Webb, L. J. *see* Cooke, R. G.
Weber, G. F., and Roberts, D. A. 1347
Webjörn, B. *see* Hägglund, E.
Webster, C. J., and Ashton, L. A. 1647
Webster, G. L. 1006
Webster, L. T. 1303
Weck 842, 1436
Weck, J. 3516
Wegelius, T. 1696
Weigel, A. S. 1613
Weir, A. H. W. 878
Weiss, M. 819
Weitzman, S. *see* Potter, H. S.
Welch, D. S. *see* Buchanan, T. S.
Wellington, W. G. 43
—, Sullivan, C. R., and Green, G. W. 3588
Wellner, C. A. 3728
—, and Evenden, J. C. 3727
Wellman, F. L., and Grant, T. J. 4002
Werfft, R. 1046
Wertz, B. 3346
West, A. P. *see* Manalo, G. D.
West, C. J. 638
West, O. 1073
West, P. H. 3465
West, T. F., Hardy, J. E., and Ford J. H. 4015
West-Nielsen, G. 558, 4110
Westveld, M. 1816
Westveld, R. H. 181
Wetmore, R. H. 1851
Wettstein, W. 1866
Weymuth, H. 2684
Whalley, W. B. *see* Badcock, C. G.
— *see* Robertson, A.
Wheeting, L. C. *see* Starr, W. A.
White, C. T. 113
White, D. E. *see* Bottomley, W.
White, L. T. 1331
—, and Linzon, S. N. 1288
White, P. R. 1851
Whitehead, W. L. *see* Breger, I. A.
Whiteside, J. M. 3182
Whitman, J. A. 1464
Whitney, R. D. 3976
— *see* Warren, G. L.
Whyte, R. O. 3522
Wibstad, K. 1265
Widell, T. A. *see* Blomquist, U. O.
Wiedemann, E. 537, 538, 1437, 1995
Wiederholt, W. *see* Becker, G.
Wieliczka, Z. 3766, 3803
Wijk, C. L. van 230, 280, 2741, 3072
— *see* Bakker, A. J.
Wijnhamer, P. T. 4296
Wiklund, H. 2606
Wiksten, Å. 2938
Wikstrom, J. H. 585
Wilbur, K. M. *see* Bernheim, F.
Wilcox, H. 1518
Wilczek, R. 1922
— *see* Robyns, W.
Wilde, S. A. 2734
—, and Paul, B. H. 3345
—, Paul, B. H., and Mikola, P. 3226
—, and Pronin, D. T. 2331
Wilhelmi, T. 1444, 3202, 3228, 3231
Wilke, G. *see* Freudenberg, K.
Wilke, K.-D. *see* Runkel, R. O. H.
Willeke, L. *see* Winter, A. G.
Williams, E. J. *see* Christensen, G. N.
Williams, J. R. 2246
—, Moutia, L. A., and Hermelin, P. R. 1385
Williams, R. W. M., and Chavasse, C. G. R. 3725
Williamson, M. J. 4007
Williston, H. L. 159
Wilson, F. G. 3224
Wilson, G. M. 1202
Wilson, J. A. 2167
Wilson, M. E. *see* Reid, J. S.
Wilson, R. F. 1271
Wilson, R. W. *see* Jensen, V. S.
Wilson, S. D., Jui, W., and Shu-Chien, S. 830
Winkler, O. 2226
Winkoop, W. van 3020
Winogradsky, S. 1817
Winter, A. G., and Willeke, L. 3601

Winter, H., and Daskaloff, I. 4196
Winterfeld, K. *see* Mayer-Wegelin, H.
Winters, R. K. 834
Wise, H. F. *see* Cummings, L. J.
Wise, L. E. 4203
Withenshaw, G. 2208
Witt, W. K., Jr. 2388
Witte, A. 2072
Wittich, W. 30, 198, 885, 2023, 2142
Wnuk, M. *see* Perkitny, T.
Wodzicki, K. A. 929
Woelfle, M. 3184
Woestmeyer, V. W. 399, 1307
Wojciechowski, E. *see* Perkitny, T.
Wolcott, G. N. 1662
Wolf, D. E. 3961
Wolf, F. A. 2271
Wollenberg, R. P. 2458
Wood, A. S. 200
Wood, G. H. S. 2792
Wood, H. E., *et al.* 399
Wood, L. W. 1513, 1522
Wood, R. F., Miller, A. D. S., and Holmes, G. D. 1213
—, and Nimmo, M. 1177
—, and Pinchin, R. D. 1116
— *see* Dallimore, W.
Woodland, W. A. *see* Pratten, F.
Woods, F. W. 3650
Woods, R. P. 2559
Woodson, R. E., Jr. 999
Woolley, R. B. 2579
Worley, D. P. *see* Bramble, W. C.
Woudenberg, J. P. M. *see* Linde, R. J.
Wraber, M. 233, 1108, 3676
Wright, E. 4338
Wright, G. W. 1614, 1706, 2577
— *see* Ellwood, E. L.
Wright, J. E. 744
Wright, J. O. 1946
Wright, J. W. 1867, 3688
Wright, R. H., and Hayward, A. M. 3313
Wright, W. 4306
Wurster 1785
Wutz, A. *see* Mägdefrau, K.
Wyatt-Smith, J. 161, 987, 1000, 1423, 2675
Wycoff, H. B. *see* Walters, C. S.
Wyk, W. C. E. van 3289
Wylie, A. E. 684, 1863
Wyman, D. 3791

Xabregas, J. 1736
Xabregas, J. Lopes *see* Velho, H. de L. Abreu
Ximenez de Embun, J., and Arnao, G. 1230

Yamaji, K. *see* Kawanda, M.
— *see* Sakaguti, K.
— *see* Toyama, S.
Yamamoto, A. *see* Tachi, I.
Yamane, K. *see* Nozoe, T.
Yamashita, T. 4205
Yamaya, K. 2735
Yarwood, C. E. 443
Yasue, A. *see* Nozoe, T.
Yatagai, M. 1264
Yavorsky, J. 4261
Yazawa, K. 619, 3302
Youl, J. W. 4349
Young, D. W. 1307
—, and Fisher, C. E. 335
— *see* Fisher, C. E.
Young, H. C. 3104
Youngberg, C. T. 2729, 2909
—, and Scholz, H. F. 2332
Youngman, B. J. 3655
Yuill, J. S., Eaton, C. B., and Isler, D. A. 2286

Zaborovskiĭ, E. P. 2924
Zacher, F. 2759
Zaharov, P. S. 2308
Zahnley, J. W. 399, 1307
Zaĭcev, A. I. 3902
Zaĭcev, B. D. 2006
Zaĭceva, A. A. 2920
Zakarias, A. 2218
Zavadil, Z. 3768
— *see* Vincent, G.
Zavjjalov, M. A. 3920
Zehetmayr, J. W. L. 1179
Zelinková, M., Hořavka, F., and Řetovský, R. 3765
Zeller, O. 1854
Zemljanickiĭ, L. T. 4429
Zentgraf, E. 1993
Zentmyer, G. A. 2769, 3771
Ziani, P. 2011
Ziebarth 1785
Zillgitt, W. M. 1097
Zimmerle, H. 1201
—, and Linck, O. 1109
Zin, K. 2738
Zinkiewicz, W. 542
Zinno, Y. *see* Nohara, Y.
Zobel, B. 3619
Zohary, M. 99
Zoljomi, B. 2093
Zonn, S. V. 25
Zozulin, G. M., and Kusmarceva, N. M. 3705
Zucca, J. J. 1680
Zuckermann, B. M. *see* Curl, E. A.
Žukov, A. B. 293
Zunino, H. A. 2310
Žurbin, A. I. 962
Zycha 419
Zycha, H. 4267
Zykov, I. V. 1223

SPECIES INDEX

Abies 994
Abies spp. 265, 1163, 3963, pp. 5–15
A. alba: diseases 427, 435; ecology 14, 126, 1938, 2817, 3674, 3704; in Croatia 2976; in Friesland 2881; in mixtures 3239, 3822; increment 552; insects 491, 498; morphology 3674; natural regeneration 1088, 3730; physiological maturity 144; provenance trial 1117; pruning 2137; resistance to herbicides 257; response to fertilizers in nursery 3772; root system 3679; seed—(chemical constituents) 3593; (germination) 1048, 3767, pp. 5–15, (weight) 250; volume tables 2322, 3204, 3209; **wood:** assortments and log grades **348**; improved wood **2552**; lignin **1535**; mine timbers **2488**; yield 3239
A. amabilis 1166, 2730
A. balsamea: decay of insect-killed trees 472; flowering, effect on—(growth) 148, (Spruce budworm) 4031; general account 3645; injuries—(frost) 3944, (moose) 2281; insects 1404, 3162–4, 4022, 4031; natural regeneration 2874, 3734; needle oil **4425**; phenology 2851; planting stock, storage of 2960; rots 472, 2255; **wood:** chemical barking **2189**; floating properties **2212**; lignin **1528**
A. bornmuelleriana 4077
A. cephalonica 1892
A. cilicica 4077
A. concolor 185, 1108–9, pp. 5–15
A. firma 1018, **3423**
A. grandis: in France 203–4, 2031; in Germany 1109; in Jugoslavia 1108; in Norway 2027; rots 424; seed germination 3767; wood chemistry **2431**
A. homolepis 1018
A. lasiocarpa 2029
A. mariesii 1018
A. mayriana: balsam **812**; bark thickness 3201; volume increment 3237; **wood:** electrical resistance **3316**; moisture content and shrinkage **1505–6**
A. nobilis see *A. procera*
A. nordmanniana: form and volume 4077; in France 203; in Jugoslavia 1108; in Transcaucasia 3670; natural regeneration 2873; seed germination 3767
A. pectinata see *A. alba*
A. pindrow **3444**
A. procera (*nobilis*) 1166, **2431**, 3767
A. sachalinensis **812**, 2819–20, 3100
— var. *mayriana* see *A. mayriana*
A. sibirica 3161
A. spectabilis 29
A. veitchii 1018
Abrus schimperi **756**
Acacia spp. 1911, 2922, 3656
A. amentacea 1307
A. aneura 514
Acacia arabica **707**, 1189, 2106, 2778, 3002
A. campylacantha 3637
A. catechu **2616–7**, **2626**
A. cavenia 2891
A. cyanophylla 2095
A. dealbata 2946
A. decurrens 214, 295, 1299, 2778
A. decurrens var. *mollissima:* adhesives from bark **2626**; cross with *A. decurrens* 2778; gum **822**; in India 2179–80; plantations—(insectivorous birds in) 461, (soils) 911, 1124, (weed control) 1308; provenance and tannin content **1721**; seed treatment 245; **wood:** extractives **4219**; properties **3307**
A. drepanolobium **756**
A. exuvialis 3656
A. farnesiana 1307, 2778
A. floribunda see *A. longifolia*
A. galpinii 3637
A. longifolia (*floribunda*) 57
A. melanoxylon **2403**
A. mellifera 2778
A. modesta 1189, 2778, 2859
A. mollissima see *A. decurrens* var. *m.*
A. moniliformis **3485**
A. raddiana 1984
A. rovumae **756**
A. senegal **1738**, 2778
A. sieberiana 3637
A. spirocarpa 1984
A. woodii 2805
Acer 3609, **4224**
Acer spp. **1529**, **3336–7**, pp. 5–15
A. campbellii 2892
A. campestre **2488**, 3170, 3810
A. dasycarpum see *A. saccharinum*
A. macrophyllum **2431**, 2730, **4354**
A. monspessulanum 1061, **2413**
A. negundo: chemical control 399; disease 445; in Jugoslavia 3810; in Macedonia 326; insects 2290; seed bagging 1867
A. palmatum var. *dissectum* 3575
A. platanoides: cambial activity 1860; damping off 1149; die-back 3056; in Jugoslavia 3810; insects 3170; leaf morphology 1863; osmotic value 1852; seed bagging 1867; **wood:** lignin **4208**; mine timbers **2488**
A. pseudoplatanus: anti-bacterial effect of leaves 3601; cambial activity 1859; disease 3990; in Czechoslovakia 1061; in Jugoslavia 3810; in Macedonia 326; in mixture with—(Larch) 3822, (Spruce) 2116; on spoil mounds 2099; root growth and illumination 3682; site quality 534; slug damage 4068; **wood:** anatomy **4165**; mine timbers **2488**
A. rubrum 1307, 2968, 2997, 3082, 3260
A. saccharinum (*dasycarpum*) 250, 2969, 3075, 3810
Acer saccharum: chemical control 1307; decay 1325; decomposition of litter 24; dendrochronology 2336; diseases 1337, 2263; ecology 178, 1074, 2975; improvement fellings 3260; leaf morphology 1863; mortality in unthinned stands 307; natural regeneration 1087; phenology 1960, 2851; sap, variations in sweetness and flow **825**, **4434**; **wood:** dimensions **684**; dyeing **2483**; flooring **1603**; mill study 3260; sawdust as fuel **2528**
A. tataricum 247, 1149, 3810
A. truncatum **830**
Acioa schultesii 2808
Acokanthera friesiorum **4414**
Adansonia digitata 1014, **3455**
Adenanthera pavonina 3764
Adina cordifolia **637**, **1507**, **2563**
Aesculus glabra 1307
A. hippocastanum: disease 1326; fodder value of fruit **4435**; in Jugoslavia 3810; mycoflora of buds 975; phenology 1953, 2763
A. indica 169
Afrormosia elata **2427**
Afzelia 3657
Afzelia spp. **1520**, **4187**, **4283**
A. bella **2394**
A. bijuga see *Intsia bijuga*
A. bipindensis **2394**
A. quanzensis 212, **594**
Agathis spp. 1031
A. alba 995
A. australis 146, 995, 1047, **2389**
A. loranthifolia 238
A. microstachya **4301**
A. palmerstoni **4301**
A. vitiensis 3156
Aglaia **602**
Ailanthus altissima (*glandulosa*) 322, 326, 1182, 2154, 3810
Alangium chinense 945
Albizzia sp. **4332**
A. antunesiana 3637
A. caribaea **4155**
A. gummifera 212
A. lebbek 2108, **4419**
A. montana **3455**
A. procera **686**
A. sericocephala 3637
A. stipulata **4419**
Alnus **2405**
Alnus spp.: chemical control 397; germination tests pp. 5–15; in Hungary 2963; insects 482; pollen output and seed production 1045; response to fertilizers 3772; root nodules 2829; wood, improved **2552**
A. acuminata 2153
A. fruticosa 1990
A. glutinosa: cambial activity 1860; germination 1048; insects 467; mine timbers **2488**; on Lower Dnieper flood plain 2965; on spoil mounds 2101; osmotic value 1852; pollen viability 1046; provenance 223

Alnus glutinosa × *A. incana* **3378**
A. incana 1048, 1307, 2116, **2488**
A. japonica **3298**
A. jorullensis 2863
A. nepalensis 2045, 2103, 2892
A. rubra: chemical control 2249; litter 2730; **wood:** chemical barking unsuccessful **3870**; chemistry **2431**; properties and uses **1485**; seasoning **4354**
Alstonia angustiloba 3867
A. congensis **1489**
A. scholaris 1299
A. spathulata 3867
Altingia excelsa **816**
Amelanchier 114
Amentotaxus 3646
Amorpha fruticosa 326, 1149, **4429**
Amygdalus nana see *Prunus tenella*
Andira jamaicensis 1022
Androstachys johnsonii 212
Aniba sp. 3537
A. rosaeodora **3293**
Anisoptera spp. **637**, **762**, **4333**
Anneslea 2811
Anogeissus acuminata **2529**
A. latifolia **707**, **760**
Anthocephalus cadamba 3999
A. macrophyllus 3243
Antiaris africana **4332**
Antrocaryon micraster **2185**
Apocynaceae 3649
Aquilaria agallocha **3477**
Araucaria spp. 4005
A. angustifolia: artificial regeneration 2877; in Madagascar 214; increment and yield 4108; mycorrhiza 2826; seed testing 3766; spacing 3803; **wood:** boat building **4307**; orange boxes **4300**; plywood standards **3380**; pulp **4379**; properties **1480**, (strength) **1515**; use of waste **3025**
A. bidwillii 3083
A. cunninghamii 3689, 3772, **4185**
Araucariaceae 3669
Arbutus menziesii **4354**
A. unedo **828**, 2344, **2621**
Archytaea vahlii 161
Artocarpus hirsutus **707**
Arundinaria spp. 343
A. maling 2836
Arundo donax **1693**
Aspidosperma 999
A. quebracho-blanco 4084
Astronium fraxinifolium **3290**
Atropa belladonna 1242
Aucoumea klaineana 1986, **2393**
Austromyrtus **4164**
Avicennia nitida **3281**
Azadirachta indica see *Melia azadirachta*

Baikiaea plurijuga: fire protection 1300; general account 3637; girth increment 4103; natural regeneration 1094; **wood:** chemistry **648**, **4221**; flooring **1603**; seasoning **762**
Bambusa arundinacea 1244
B. longispiculata 1178, 3790
B. polymorpha 3685
B. textilis 3790
B. tulda 3790
B. tuldoides 3790
Bambusa ventricosa 3790
B. vulgaris **2592**, 4056
Bambuseae 267, **588**, **752–4**, **1263**
Baphia nitida **646–7**
Barringtonia acutangula 2956
B. racemosa **3455**
Bauhinia variegata **1719**
Beilschmiedia 1906
B. tawa **1634–6**
Berberis spp. 1307, 1341
B. vulgaris 1048
Berlinia 1037, 1908–9, **4332**
Bersama magnifica 1882
Bertholletia excelsa **595**
Betula **2405**
Betula spp.: breeding 1122; chemical control 397, 2250; germination tests pp. 5–15; lignin **336–7**, **1529**; sawdust as fuel **2528**
Betula alba s.l.: ammonification under 1028; breeding 956, 2782; elk damage 2280; felling **355**; inflammability of foliage 3061; insects 482, 2310, 3132; leaf—(development) 3700, (form) 2802–3; mycorrhiza 1030; natural regeneration 2046, 2126; pollen output and seed production 1045; root system 142; rotation 3249; sap **3503**; taxonomy 106, 2802–3; volume table 3205; **wood:** abnormal **1499**; anatomy **2403**; crosscutting **3880**; flooring **1603**; improved **2552**; lignin **642**; pulp **2595–7**; seasoning **3445**; skidding **3985**; weight **4192**; see also *B. pubescens* and *B. verrucosa*
B. alnoides 2045, 2892
B. carpatica 106, 2802, 2910
B. cylindrostachys 2103
B. glandulosa 1990
B. humilis 1852
B. litwinowii 1104
B. lutea: breeding 1122; coppicing 3736; decay 1326; felling **349**; fungi 2790–1; improvement fellings 3260; injection experiments 4072; mortality in unthinned stands 307; phenology 2851; **wood:** anatomy **3290**; flooring **1603**; mill study 3260
B. maximowicziana 1867
B. medwediewi 3672
B. nana 1864, 1990
B. nikoensis **698**
B. obscura 2804
B. oycoviensis 2803
B. papyrifera: breeding 1122; coppicing 3736; improvement fellings 3260; injection experiments 4072; moose damage 2281; phenology 2851; **wood:** chemical barking **2189**; chemistry **3331**, **3339**, **4208**; mill study 3260; veneer **2498–9**
B. pendula see *B. verrucosa*
B. populifolia 24, **721**, 4061
B. pubescens: breeding 1122; leaves—(chemical composition) 1810, (measurements) 2802, (silkworms reared on) 1246; north of the arctic circle 3007; osmotic value 1852; photosynthesis 3604; seed—(germination) 1048, 2059, 2910, 2928, (storage) 3762, (treatment) 2928; taxonomy 106, 2802; under Spruce 2116; veneer **2501**; see also *B. alba*
Betula resinifera 1990
B. tortuosa 106, 2802
B. verrucosa (*pendula*)*:* breeding 1122–3; cambial activity 1051, 1860; composition of rainwater under 61; increment 2094; leaves—(chemical composition) 1810, 1849, (measurements) 2802, (silkworms reared on) 1246; osmotic value 1852; plantations on steppe 1104, 2094; pollen 1046; seed—(germination) 1048, 2059, 2910, (storage) 3762, (treatment) 2928; smooth-barked type 2782; taxonomy 106, 2802; **wood:** chemistry **4213**; mine timbers **2488**; pulp **4376**; veneer **2500–1**; see also *B. alba*
Betulaceae **2405**
Blighia 1922
Boldea boldus 1040
Bolusanthus speciosus 1886
Bombacopsis sp. **2391**
Bombax chevalieri **1744**
B. gnaphalodendron **2604**
B. insigne **2529**
B. malabaricum **624**, 1096, **1507**, **2529**
Boraginaceae 107, 2777
Borassus 3648
B. flabellifer p. 114
Borojoa patinoi 115–6
Boswellia serrata: growth rings 3227; ionic diffusion in wood **1507**; insects 1371; propagation by suckers 2949; pulp and paper **4373**; storage of poles **755**
Bowdichia brasiliensis **3382**
B. virgilioides 3797
Brachylaena hutchinsii **1520**, **1715**, **2391**
Brachystegia 3658
Brachystegia spp.: natural regeneration 1095; root system 1037; **wood:** natural durability **4332**; pulp **1704**, **2603**; uses of bark **4413**
B. boehmii 3637
B. spiciformis **762**, 3637
Brosimum uleanum 3537
Broussonetia kazinoki 270
B. papyrifera 124, **3458**
Bucida buceras 1441
Bucklandia populnea 2103, 2892
Bulnesia retamo 909
B. sarmentoi 3855
Bursera microphylla **4428**
B. simaruba 1022

Caesalpinia melanocarpa **3308**
Caesalpinioideae **3295**
Callicarpa japonica **829**
Callitris rhomboidea **2522**
Calluna vulgaris: ammonification under 1028; antibacterial effect of leaves 3601; ecology 898; fodder value **4402**; influence on nutrition of conifers 1024, 1948; review of literature 1002; shaded out by Pine 2724
Calophyllum tomentosum **686**
Calpocalyx sp. **2614**
Calycophyllum candidissimum **2524**

Campnosperma sp. 3243
Canarium euphyllum **1483**
C. luzonicum **2640**
C. schweinfurthii **595**, **1732**, **3498**
C. strictum **1507**
Canthium mundtianum **3289**
C. oddoni **2185**
Capparis nectaria 3652
Caragana arborescens: damping off 1149; insects 4023; interspecific grafts 1163; on Lower Dnieper sands 2965; root system 142; wildlife management 932
Carapa spp. **4182**
C. guianensis **2392**
C. moluccensis **686**
Cardwellia sublimis **1490**
Carissa edulis 3637
Carpinus **2405**
C. betulus: antibacterial effect of leaves 3501; germination tests p. 11; in Czechoslovakia 1061–2; in Macedonia 326, 3710; in mixture with Larch 3823; osmotic value 1852; **wood:** mine timbers **2488**; spiral grain **1499**
Carya spp.: chemical control 1307; **wood:** baseball bats p. 352; picking sticks **2521**; pulping **3466**; seasoning **1670**; veneers **1584**, **4286**
Casimiroa 3660
Cassia aphylla 909
C. fistula 950
C. siamea 1125, 3764
C. singueana **756**, 3637
C. tora 1850
Castanea 1003, 1163
C. crenata 428, **3298**, 3621, 3690
C. dentata 2257 **3481**
C. mollissima 2950, 3110, 3792
C. sativa: biology of reproduction 3690; calcium metabolism 1025; cambial activity 1859; clonal differentiation 3654; coppice—(management) 561, (yield) 2345, 2874, 4100; cultivation for profit 2868; cultivation of cambial tissue *in vitro* 609, 1051; diseases 428, 439, 2258–61, 3109, 3116–7, 3981, 3990–1; disinfection of fruit 2265; ecology 1931; hybridization 418, 3621; in Jugoslavia 3810; in Portugal 1078–9; increment 4100; international conference 2708; leaf form 1905; research 182, 1079, 1874, 4478; seed production 2833; suberization 968, **1497**; vegetative propagation 1163, 3538, 3792–3; **wood:** anatomy 3290; cooperage 3538; mine timbers **2488**; pulp **1689**, (from tannin extraction residues) **780**, **1690**; supplies for Italian tanning industry **2619**
Castanopsis chrysophylla **2431**, **4354**
C. sempervirens 3109
Castanospermum australe **651**, **4165**
Casuarina equisetifolia: die-back 515; disease 4002; in Ceylon 2144; in Greece 2095; in India 2145–8; in U.S.A. 3717; preservative treatment of posts **1641**; rotation 4128; soil requirements 1023; spacing and wind firmness 285; transplants 2953; underplanting 1192
Casuarina sumatrana 2953
Catalpa bignonioides 326
C. speciosa 1863
Ceanothus ovatus 930
C. velutinus 1947
Cecropia leucocoma 1913
C. peltata 1022
Cedrela spp. 2074, 3537, 4005
C. febrifuga 2892
C. huberi **4155**
C. mexicana 2012, 2878
C. odorata 214
C. sinensis 975
C. toona **686**
Cedrelinga catenaeformis 3537
Cedrus spp. pp. 5–15
C. atlantica 203, 1019, 3688
C. deodara: composition of litter 29; failure of Darjeeling plantations 2892; in Ireland 1106; increment and yield 3231; pencil slats **2522**; thinning 3831
Cedrus libani: canker 438; from Cilician Taurus 2037, 3671; in Pennsylvania 1939; interception of rain 3575; pollen dispersal 3688; taxonomy 105; **wood:** anatomy **3290**; properties **4158**
Ceiba pentandra **1744**, 3537
Celastrus angulata **810**
Celtis africana (*kraussiana*) 982
C. australis 2253
C. occidentalis 3810
Cephalotaxaceae 3669
Cephalotaxus 71–2
C. drupacea 3595
Ceratonia siliqua: cytology 79; general account 341; gum **823**; in Greece 2095; nutritive value of pods **1740**; reproduction and distribution of sexes 2834
Ceratopetalum apetalum **4257**
Cercis canadensis 3115
C. siliquastrum 3601
Chamaecyparis **608**, **1494**, **4166**
Chamaecyparis spp. pp. 5–15, 265
C. lawsoniana: chemical constituents 3595; in Germany 1109; in Jugoslavia 1108; on spoil-mounds in Cornwall 2099; root rots 2257; shelterbelts in N. Zealand 2151
C. nootkatensis **2431**, 3007
C. obtusa: distribution 1019; ecology 2858; fertilizer trials 2934; induced polyploidy 958; leaf oil **2637**; resistance to—(cold) 2819–20, (disease) 3090; snow damage 3057; soil requirements 2738; soils under 2726–7; vegetative propagation 1155, 2945; **wood:** natural durability **3423**; strength properties **634**
C. pisifera 1018, 1324, **1496**
Chikrassia tabularis **686**
Chlorophora excelsa: diseases 1328; planting in Portuguese E. Africa 212; **wood:** chemistry **650**, **1541**; properties **3285**; 'stones' in **774**
C. tinctoria **595**
Chloroxylon swietenia 194, **2403**
Chorisia insignis 3665
Chrysobalanoideae 1915
Chrysophyllum sp. 3537
C. oliviforme **1641**
C. pauciflorum **1641**
Cinnamodendron sampaioanum **2406**
Cinnamomum camphora 139, 2765, 2819, 2820, 3655
Cistanthera papaverifera **4265**, **4283**
Citharexylum fruticosum **1641**
Citrus trifoliata 1163
Cladrastis spp. **1492**
Clarisia sp. 3537
Cleistanthus anomala **2639**
Cleistopholis patens **2614**
Clerodendron trichotomum **829**
Coccolobis laurifolia 1022
Cocos nucifera 2289
Cojoba arborea **3283**
Cola acuminata 2123
C. chlamydantha 1348
C. gigantea 1882
Combretum caffrum (*salicifolium*) 982
C. gueinzii **756**
C. obovatum **756**
C. zeyheri **756**
Commiphora ugogensis **756**
C. fischeri **756**
C. schimperi **756**
Comptonia peregrina 1307
Coniferae 991–2, **2409**
Conocarpus erectus **3281**
C. lancifolius 2894
Copaifera arnoldiana **2403**
Cordia alliodora 1192
C. macrostachya 410–1, 2246–7
C. macrothyrsa 1882
Cornaceae **604**
Cornus florida 1450, **2521**
C. racemosa 403
Corylus 1902, **2405**
Corylus spp. 313, 399
C. americana 1307
C. avellana 1213, 1852, **2488**, 3111
C. colurna 169
Crataegus spp. 407, 1307, 3079
C. coccinea 1048
C. mollis 1961
C. monogyna 1878
Crataeva nurvala **3486**
Cratoxylon arborescens **4154**
Crinodendron patagua 1040
Croton megalocarpum **1520**, **2392**
Cryptocarya rubra 1040
Cryptomeria japonica: absorption of water by roots 63; chemical constituents 3595; crown-spread/diameter ratio 529; distribution 1018; fertilizer trials 2933–4; fungi found on 413; germination tests 1049; in Madagascar 214; increment 4108; landslide planting 2103; natural regeneration 2842; plantations near Darjeeling 2892; polyploids 2779; resistance —(cold) 2819–20, (disease) 1324; response to release 2993; soil requirements 139, 2738; 'snow mould' 3090; snow damage 3057; transpiration 2764; **wood:** chemistry **2432**; density **1509**; heartwood **619**; natural durability **3423**; thermal properties **4177**
Cryptosepalum 3658
Cullenia excelsa **1507**
Cunninghamia lanceolata (*sinensis*) 2035, 4108
Cunoniaceae 3653
Cupressaceae 3669
Cupressus spp. 67, 2095, 2151, pp. 5–15

Cupressus cashmeriana 2103, 2891
C. funebris 943
C. lusitanica 1338, **1604**, 1819, 2277, 3739
C. macrocarpa 436, 1132, 1338, 2099
C. sempervirens 437
C. torulosa **2522**, 3091
Curtisia dentata (*faginea*) 982
Cussonia 3637
C. spicata 3637
Cylicodiscus gabunensis **649**
Cynometra 1819, 3658
C. alexandri **637**, **4283**, **4332**
C. polyandra **760**
Cytisus scoparius 1048, 2125, 2250

Dacrydium bidwillii **2448**
D. colensoi **4427**
D. cupressinum **735**, **1540**, **4191**
D. fitzgeraldi 3647
Dacryodes buettneri **2614**
Dalbergia boehmii 1882
D. cearensis **4165**
D. melanoxylon **756**
D. paniculata **3310**
D. sissoides 111
D. sissoo 418, **686**, 1218
D. stuhlmannii **756**
Daniella klainei **2614**
D. ogea **4332**
Daphnandra spp. **804–6**
Daphne oleoides 169
Davidia involucrata 56
Dendrocalamus strictus 344, 1244, 2837, 3790
Derris spp. 1157
Dialypetalanthus fuscescens 117
Dichrostachys glomerata **756**, 1886
D. nutans 405
Dicorynia paraensis **1484**
Diospyros spp. 965, **3290**
D. hebecarpa 3599
D. melanoxylon **4421**
D. virginiana 1307, **2521**
Dipterocarpaceae 978, 4069
Dipterocarpus spp. 1000, **1603**, **2529**
D. trinervis **4326**
Distemonanthus benthamianus **2614**, **3284**, **4222**
Dodonaea viscosa 1189, 2859
Dombeya pulchra 483
D. rotundifolia 3637
Dorycnium rectum 2923
Drimys winteri var. *chilensis* 947–8, 1040
Dryobalanops 4120
D. aromatica 2953
D. oblongifolia 2953
Duabanga sonneratioides 1850
Duboisia spp. **3491**
D. hopwoodii **807**
D. leichhardtii **3491**
D. myoporoides **4416**
Dyera lowii 280
Dysoxylum **602**
D. spectabile 2275

Elaeagnaceae 56
Elaeagnus spp. 56, 2726
E. angustifolia 931, 935, 2164, **2633**
E. commutata 399, 1307
E. pungens 1347
Elaeis guineensis: management of natural stands 340; morphology 939; oils **1734–5**; root system 1946; wilt disease 3983
Elaeocarpus 121
Endiandra palmerstoni **1490**
Endospermum peltatum 1430
Engelhardtia **602**
Entandrophragma utile: **wood:** anatomy **1490**; bending properties **4265**; chemistry **641**, **4209**; properties **2394**; seasoning **762**
Entelea arborescens 3668
Eperua spp. **1481–2**
E. falcata **2427**
Ephedra sp. **801**
Eriandra 2806
Erica arborea 2344, **2621**, **3392**
Eriodendron guineense **1744**
Erythrina abyssinica 1886
Erythrophleum spp. **646**, **1482**
E. guineense 965, **2614**, **4332**
Eschweilera spp. **4225**
E. luschnatii 4052
E. sagotiana **3283**
Eucalyptopsis papuana 113, **605**
Eucalyptus spp: controlled pollination 1875; damping off 3974; essential oils **3500**; insects 1385; mycorrhiza 1030; nursery practice 232, 1139; plantations in—(Cuba) 197, (Cyprus) 1188, (France) 2032, 3742, (Greece) 2095, (India) 2034, (Madagascar) 214, (Sicily) 1462, (Spain) 1462, (Sudan) 3002; resistant to herbicides 3083; rotational lopping for oil production 2001; transpiration 64; transplanting in pots 2076; **wood:** chemistry **640**, (tannins) **797–8**; fibrous plaster from bark **4412**; preservative treatment **1640**; pulp **2599**; yield **1462**
E. acacioides 1013
E. alba 2953
E. amygdalina (*radiata*) **3501**
E. australiana **817**
E. bicostata 2033
E. bosistoana 1013
E. botryoides 2159
E. calophylla **3501**
E. camaldulensis see *E. rostrata*
E. citriodora 295
E. coccifera var. *favieri* 964
E. cornuta 1013
E. corymbosa **3501**
E. crebra 1013
E. deglupta 216, 2896, 2953
E. diversicolor 318, **4162**
E. dives **817**
E. erythronema **798**
E. falcata **798**
E. gardneri **798**
E. gigantea **767**, **1544**
E. globulus: chemical constituents 56; in Cyprus 1013; in India 2034; in Spain 2033; shelterbelts in Italy 2159; spiral grain **4355**
E. gomphocephala 1013
E. hemiphloia 1013, **4175**
E. leucoxylon 1013
E. maculata **3288**, **4185**
E. marginata **1542**, **1603**, **3290**, **4162**
E. microcorys 295, **1603**
E. obliqua **1711**, **3501**
E. occidentalis **798**, 1013
E. paniculata 1013
E. polyanthemos 1013
E. propinqua 1013
Eucalyptus radiata see *E. amygdalina*
E. redunca **798**, **1716**
E. regnans: kinos **3501**; **wood:** chemistry **1525**, **1542**, **2433**, **3340**, **4201**; diffusion in heartwood **4185**; plywood **1564**; strength properties **2425**; veneer **4288**
E. resinifera **1641**
E. robusta: afforestation of patanas in Ceylon 295; girdling **2187**; in Cyprus 1013 in Puerto Rico 1115; planting methods 281; preservative treatment of posts **1641**; transplants 2953
E. rostrata: dune fixation 2158; ecology 1927; in Cyprus 1013; in India 2034; in Spain 2033; shelterbelts in Italy 2159–60; wood density **3322**
E. rudis 2034
E. saligna 295, 1013, **1691**, 2953
E. sideroxylon 1013, **3501**, **4175**
E. smithii **817**
E. stellulata 2032
E. tereticornis 1013, 2034, **2186**
E. torreliana 1013, 2035
E. viminalis 964
Eucryphia cordifolia **4393**
Eugenia spp. **602**, 2896
E. caryophyllata 1413
E. jambolana **2563**
E. tomentosa **4417**
Euonymus 1901
E. europaeus 207, 960, 1852, 2080, **4433**
E. verrucosus 960, 1148, 2080
Eupatorium sp. 1319
Euphorbia 1903
Eusideroxylon zwageri 525
Euxylophora paraensis **3382**

Fagara arenaria **808**
F. heitzii **2614**
F. macrophylla **4415**
F. merkeri **756**
Fagus **597**, 1163
F. spp. pp. 5–15
F. crenata **698**, **746**, **1699**, 2726, **4177**
F. grandifolia 24, 1872, 2851
F. moesiaca 1061–2, 3710
F. orientalis **1498**, 2816
F. sylvatica: cambial activity 1051; cleaning at thicket stage 3829; coppice with stands 561; crown development 2330; die-back on limestone soils 2220; diseases 419, 3097–8; distribution 141; ecology 1101; effect on—(humus layer) 1027, (soil fauna) 903–4, 1822, (soils) 2739; growing stock 1452; height curve 1417; in mixture with Larch 3822–3; increment—(and drought) 539, (in selection forest) 552, (of suppressed branches) 158, 3697; injury—(fumes) 383, (squirrel) 449; insects 465, 482, 2304; interspecific grafts 1163; leaf development 3700; length of growing season 13, 3562; mycorrhiza 1073; natural regeneration 3735; nursery practice 265,3772; nutritive value of oil cake **1741**; on spoil mounds

2099; phenology 2849–50; provenance trials 224–5, 1116; seed—(collection and storage) 2918, (germination tests) pp. 5–15, (stratification) 1048; silvicultural treatment—(in Chilterns) 2847, 3735, (in Germany) 2994; site quality 534, 896; succession 3704; thinning 3835–8; under Spruce 2116; volume tables 2327, 3204, 3209; wildings as planting stock 2007, 3737; **wood:** anatomy **3296**; assortments and log grades **348, 2327**; decay **1649, 3424**; diffusion of water vapour through **2418**; improved wood **1643, 2555**; lignin **1535**; mill studies **683**; mine timbers **2488**; preservation of logs in forest **3428**; prevention of shakes **3449**; pulp **2595**; seasoning **764, 3445**; sleepers **3411–2, 4271**; strength properties **1498–9, 4196–7**; tanning extract from sulphite liquor **1717**; thermoplastic behaviour **3324**; utilization in Poland **3287**; veneer logs **1587–8**; yield in mixed stands 3239

Fagus sylvatica var. *atropurpurea* 3575
Ferula spp. 1241
Ficus **602**
F. ilicina (*gurichiana*) 982
Flacourtia ramontchi 1157
Flindersia brayleyana 217, **2403**
Fraxinus spp. 383, 2725, 3158, 3600, pp. 5–15
F. americana: chemical control 3075–6; direct sowing 3817; failure in Japan 210; growth on strip-mined land 3813; improvement fellings 3260; in Jugoslavia 1108, 3810; leaf morphology 1863; mill study 3260; pollen dispersal 3688; seed weight 250; shade tolerance 1021
F. angustifolia 1964
F. commemoralis 2726
F. excelsior: cambial activity 1859–60; chemical constituents 3606; chemical control 1213; damping off 1149; failure in Japan 210; in Jugoslavia 1061, 3810; in Norway 1935; insects 3169; mixture with Douglas Fir 1196; osmotic value 1852; plantations in N. Caucasas 1105; pollen output and seed production 1045; response to trace elements 3826; root system 3679; seed treatment 3765; sex distribution in flowers 3686; site quality 534; tolerance of acid soil 1942; under Spruce 2116; **wood:** anatomy **3290, 3299**; dark heartwood **4176**; mine timbers **2488**
F. mandshurica **2564**
F. nigra 1323, 2851
F. oregona **4354**
F. ornus: in Croatia 1061–2, 2976; seed weight 250; use in afforestation in Serbia 3809–11; volume and yield tables 2344
F. oxycarpa 1964
F. pennysylvanica 2965
F. pennsylvanica var. *lanceolata* 1194, **1307**, 1867, 1961, 3688
F. xanthoxyloides 169

Garcinia morella **3489**
Genipa sp. 3537
Gigantochloa apus 3790, 4056
Gilletiodendron 3658
Ginkgo biloba 70, 1861, 3595, 3644
Gleditsia triacanthos 327, 1105, **2636**, 2923, 3810
Gliricidia sepium 3019
Glochidion **602**
Godmania aesculifolia **1483**
Gonioma kamassi **1726**
Gonystylus warburgianus **1479**
Gossweilerodendron balsamiferum **1480, 1490**
Gossypioides brevilanatum 134
Gourliea spinosa 1040
Grevillea robusta 214, **1606**
Grewia bicolor **756**
G. platyclada **756**
G. tiliaefolia **707**
Grumilea sp. **2185**
Guarea sp. **4265**
Guevina avellana 2891
Guaiacum officinale **1487, 2524**
Guibourtia 1910
Gymnocladus canadensis 3810

Halimodendron argenteum 1163
Haloxylon spp. 2176
H. aphyllum 2966
Hardwickia binata 1050
Hartogia schinoides (*capensis*) 982
Hedera helix **2632**
Hedysarum coronarium 2923
Heeria rotundifolia 3637
Heisteria parvifolia 172
Helicia rengetiensis 1007
Helicteres isora **2594**
Helinus mystacina (*ovata*) 982
Herrania 1923, **4431**
Hibiscus tiliaceus **3455**
Hippophaë rhamnoides 56, 1048
H. salicifolia 56
Hopea spp. **1477**
Hura crepitans **4156–7**
H. polyandra **4157**
Hyaenanche (*Toxicodendron*) *globosa* 982
Hymenocardia ulmoides **2185**
Hymenodictyon excelsum **2522**
H. parvifolium **756**
Hymenostegia 3658
Hyphaene crinita **3455**

Ilex spp. 3120, 3650
I. aquifolium 1155–6
I. glabra 1290, 1450, 3077
Imperata cylindrica 230, 1317–8, **2593**, 3072
Indigofera teysmanii 3000
Inga dulcis 2108
I. edulis 3120
I. vera 1192
Intsia 3657
I. bakeri **3284**
I. (*Afzelia*) *bijuga* 266, **2393**
I. palembanica 266
Isoberlinia spp. 1095, **1704, 4413**
I. globiflora **762**, 1886

Jatropha curcas **824**
Johannesia **2407**
Juglans spp. 4003

Juglans nigra: antagonism to other vegetation 2830; direct sowing 3817; failure in Japan 210; grafting 1165, 2952; in Jugoslavia 1108, 3810; metaxenia 86; on strip-mined land 2968; pruning 1211; seasoning **2574**; shelterbelts in Macedonia 326
J. regia: afforestation in Jugoslavia 3810; ascorbic acid **3488**; diseases 428, 2253; grafting 1165; injury from fumes 383; shelterbelts in Macedonia 326; twin fruits 73; **wood:** anatomy **3290**; specific gravity **3537**; veneer **686**
J. sieboldiana var. *cordiformis* **4172**
Juniperus spp. 72, 338, 930, **2401**, pp. 5–15
J. bermudiana 3059, 3152–3
J. communis 901, 1852, 2280, 3007
J. communis var. *depressa* 400
J. conferta **4418**
J. macropoda 246, **2522**
J. occidentalis **4282**
J. oxycedrus subsp. *macrocarpa* 1930
J. rigida **4418**
J. sabina 2965
J. seravschanica 1086
J. virginiana: chemical composition of litter 583, 1806; chemical control 400; effect of birds on reproduction 152; pioneer in Ozarks 1968; planted under hardwoods 297, 3819; rots 425; seed treatment 2925; **wood:** anatomy **2401**; preservative treatment of posts **2546**

Kalmia latifolia 400
Kalopanax pictus **698**
Khaya spp. **1479**
K. anthotheca 2073
K. grandifoliola 2073
K. ivorensis **2503**
K. nyasica 212
K. senegalensis 212, 3002
Kigelia pinnata 3608
Kjellbergiodendron 3659
Koelreuteria formosana 1231
K. paniculata 326
Krugiodendron ferreum **2391**

Laburnum anagyroides **2488**
Lachnopylis floribunda 130
Lagerstroemia flos-reginae 463, **707**
L. indica 1162
L. lanceolata **707**
Lannea discolor 3637
L. grandis **1695**
L. humilis **756**
Lantana camara 3083
Larix spp.: barkbeetles 491; direct sowing 274; germination tests pp. 5–15; in Iceland 2028; in Norway 2027; protection of seedbeds from frost 265; resistance to herbicides 256, 258, 1146; root system in mixtures 142
L. decidua: breeding 2780, 2902, 3612, 3617–8; damping off 1149; dendrochronology 1438, 3233; diseases 2256, 2264, 2272, 3946; drought, effects of 539, 4104;

frost resistance 1282; in mixtures 1196, 2977, 3822–3; in U.S.A. 215; in U.S.S.R. 1080; increment 539, 3235, 4104; induced polyploidy 2780; insects 1372, 3151; interspecific grafts 1163; logging studies **3882**, **3895**; mycorrhiza 2827; oleoresin **1727**; on spoil mounds 2099; phenology 1041; planting stock 1171; provenance 1282, 2897; races 218, 1282; response to herbicides 1140, 1145, 3778; response to fertilizers in nursery 3772; rooting depth 3946; seed—(dispersal) 3692, (germination) 1048, pp. 5–15, (storage) 243; snowbreaks in Norway 3008; spacing 1176; squirrel damage 449; vegetative propagation 3787; **wood:** anatomy **4165**; durability of heartwood **652**; mine timbers **2488**; properties **3286**, **3305**, **3325**

L. decidua var. *polonica* 2827
× *L. eurolepis* 2902, 3618
L. laricina 143, 149, 2851
L. leptolepis: cold resistance 2819; diseases 3090, 3618, 3946, 3993; distribution 1018; drought, effect on increment 539, 4105; hybridization 2902; in India 2892; in Jugoslavia 1108; increment 539, 4105, 4109; inflammability 3061; injury—(herbicides) 3778, (squirrel) 3126; insects 1387; natural regeneration 2841; nutrient requirements 2821; on spoil mounds 2099; phenology 1041; rots 424; seed, germination tests pp. 5–15; spacing 284; thinning 2985; volume tables 3078; **wood:** heartwood formation **3303**; properties and growth factors **3344**; specific gravity **630**; yield tables 2341, 4109
L. occidentalis **1583**, **4286**, p. 241
L. sibirica: chemical composition of seedlings 3606; in Iceland 2029–30, 2046, 2668; insects 3134; steppe afforestation 2161
Larrea cuneifolia 909
Laurelia serrata **4393**
Laurus nobilis 3666
Lawsonia alba 3094
Lebruniodendron 3658
Ledum groenlandicum 399, 1307
Leguminosae: chemical composition 3598; chromosome numbers 78, 3611; phylogeny 3610; wood anatomy **1491**, **3301**
Leptospermum citratum **817**
Leucaena glauca 1218, 1299, 2921, 3764
Leucospermum conocarpodendron (*conocarpum*) 982
Libocedrus spp. pp. 5–15
L. chilensis 303
L. decurrens 185
Licania spp. **4225**
L. mollis **821**
L. venenosa **821**
Licaria aritu 1907
Ligustrum ibota 403
L. vulgare 3601
Linociera (*Olea*) *foveolata* 982
Liquidambar orientalis 1937
L. styraciflua: afforestation of strip-mined land 2969; diseases 2276, 3115; financial maturity 3254; leaf morphology 1863; vigour classes 2846; **wood:** green mould protects from sapstain **4339**; strength properties **1513**
Liriodendron tulipifera: afforestation of strip-mined land 2968–9, 2975, 3813; antibacterial effect of leaves 3601; blister shake 3054; direct sowing 3817; general account 123; identified on air photos 1450; marking 4129; planted under cover 1194; response to release 2996; seed bagging 1867; soil under 2734; **wood:** artificial limbs **712**; cigar-boxes p. 115; lumber grade recovery **3376**; plywood **3381**, (cores) **1585**; properties **2392**
Lithocarpus densiflorus **2431**, 3109, **4354**, **4405**
L. edulis 2765
Litsea **602**
Loesenera 3658
Lonchocarpus spp. 1159
Lonicera japonica 3967
L. tatarica 1863
Lophira alata **820**, **2394**
L. procera **820**
Lophopetalum wightianum **2522**
Lovoa klaineana **2403**
Lupinus spp. 299, 2125, 2941

Macadamia ternifolia **1737**
Machilus odoratissima 2045
M. thunbergii **3879**
Maclura pomifera 326, 399, 1307, 2969, 3810
Macrolobium 3658
Magnolia spp. 1155, 1450
M. sororum **3283**
Malus communis see *Pyrus malus*
Mammea africana **4419**
Mangifera caloneura 959
M. indica 959
M. sylvatica 959
Manilkara 3661
Mansonia altissima **4265**, **4411**
Markhamia acuminata **756**
M. obtusifolia **756**
Marquesia macroura **1704**
Maytenus boaria 1040
Melaleuca alternifolia **817**
M. leucadendron 214, 1132, 2123
Melia azadirachta (*Azadirachta indica*) **1739**, 2106
M. azedarach 214
Meliaceae **1478**
Melicope simplex **799**
Metasequoia glyptostroboides 953, 3696, 4007
Michelia champaca **2522**
M. excelsa 2892
Microberlinia brazzavillensis **2403**
Micropholis chrysophylloides **1641**
Microstrobos 3647
Millettia grandis (*caffra*) 982
M. laurentii 480, 1882
M. pachycarpa **810**
M. stuhlmannii 212, **1520**
M. versicolor 1882
Mimosoideae **3295**
Mimusops heckelii **1490**, **4332**
Mitragyna ciliata **595**, **1479**, **2614**
M. stipulosa **1479**
Monopetalanthus 3658
Monotes 1001
M. glaber 3637
Mora bombycis **4172**
M. gonggrijpii **762**, **1541**, **4220**
Morelodendron 1912
Morus alba: antibacterial effect of leaves 3601; damping off 1149; shelterbelts in Macedonia 326; silviculture in India 1996; suppresses *Dalbergia sissoo* 1219; wildlife management 932
M. laevigata 3667
M. mesozygia **2393**
M. nigra 932
Musanga smithii **1744**, 1913
Myrica rubra 2946
Myoporum 1006
Myristica spp. **2395**
Myroxylon balsamum 3537
M. pereirae **818**
Myrsine **602**
Myrtaceae 112–3, **4164**

Neochevalierodendron 3658
Nipa fruticans 1243
Notelaea excelsa 3600
Nothofagus 109, **597**, 1030
Nothofagus spp. 145, 2028, 3622
N. cunninghamii **767**
N. dombeyi **4393**
N. menziesii 132, 3725
N. obliqua 1040, 2891
N. procera 2891
N. pumilio 1012, 1970
Nothopanax simplex **3499**
Nyssa sylvatica 56, **733**, p. 115
Nyssaceae **606**
Nzidora leguveliana 1882

Ochlandra travancorica 1244
Ochna pulchra 3637
Ochroma lagopus 1015, 2123, 3157, 3764
Ocimum kilimandscharicum 2183, 3764
Ocotea bullata 130
O. canaliculata **3294**
O. costulata **3294**
O. guyanensis **3294**
O. rodiaei **762**, **1603**, **4283**
O. rubra **4203**
O. usambarensis **2391**
Octomeles sumatrana **594**
Olea spp. 3600
O. cuspidata 2859
O. europaea 69, 516, 1365, **2621**
O. foveolata 982
O. hochstetteri **1483**, **1603**
Oleaceae 3600
Opuntia lindheimeri 1307
Orbignya barbosiana 2182
O. phalerata **4430**
Ormocarpum trichocarpum **756**
Ostrya **2405**
O. carpinifolia 1062, 2976
O. virginiana 1074, 3260
Ostryoderris stuhlmannii **756**
Ostryopsis **2405**
Ougeinia dalbergioides **707**
Oxytenanthera abyssinica **1692**, **2592**, **3455**
O. monostigma 1244
O. stocksii 1244

Pachylobus pubescens **2185**
Pachypodanthium staudtii **2614**
Pahudia see *Afzelia*
Palaquium sp. **4326**
Palmae 1881
Paratecoma peroba **2450**, **3290**, **4155**
Parinari spp. **4225**
P. excelsa **2396**, **4283**
P. mobola **1704**, 1886
Parrotia persica 1155
Parthenocissus tricuspidata 1878
Paulownia tomentosa 2820, 3113, 3125
Pelliciera 1010
Peltogyne spp. **1481**
P. densiflora **3382**
Pentaclethra eetveldeana **820**, **1744**, **2185**
P. macrophylla **820**, **1744**
Periploca gabonica 965
Persea gratissima 2769
Petitia domingensis 1192
Phellodendron amurense 208, 2253
Phialodiscus 1922
Phragmites communis **3455**
Phyllanthus emblica **803**
P. nobilis **1641**
Phyllocladus glaucus 127
Phyllostachys spp. 343
P. edulis **3327**
P. pubescens **622**, **623**, **2423**
P. reticulata **3322**
Phyllostylon brasiliensis **1479**
Picea 1893
Picea spp. 256–8, **795**, **2537**, pp. 5–15
P. abies: afforestation of heaths 292; age of tree and germination 1956; bark chemistry **4213**; branch-habit types 3616; breeding 228, 2774, 2780, 3616; chemical composition of seedlings 3606; chemical control 400; chlorophyll production 3604; climatic requirements 14; composition of rain-water under 61; conversion of pure to mixed stands 2004; crown weight 4092; damage—(deer) 2305, (snow) 379, (wind) 378; damping off 2070; dendrochronology 3234; direct sowing 274; diseases 419, 424, 2256, 3093, 3982; effect on—(earthworms) 1822, (soil) 1029; felling rules in U.S.S.R. 1080; foliage—(effects of light on) 2818, (inflammability) 3061; frost resistance 2819–20, 3942; harmful effects of—(bracken) 1949, (heather) 1948; height curves 1417; in Iceland 2028–9; in Japan 210; in mixtures 1193, 1196, 3821–3; increment 539–41, 553, 4092, (effect of atmospheric N on) 3557; insects 482, 491, 495–8, 1395, 2291, 2305, 2788–9, 3180, 4030, 4044; length of growing season 13, 3562; light requirements 2818–9; log grades **348**; log scaling 528; logging studies **3880–2**, **3893–5**; mycorrhiza 3684; natural regeneration 1088, 1949, 2018–20, 2126, 2872, 3730; oleoresin **813**; osmotic value 1852; physiological maturity 144; planting (methods) 2084, (season) 3806, (stock) 253, 1171; pollen dispersal 3688; polyploidy 76, (induced) 2780; provenance trials 219, 1121, 2038; pruning 155, 316, 2137; races 1870; resin-tapping 1236; resistance to herbicides 257–8, 1146–7, 3082, 3778–81; response to—(fertilizers) 3772, (trace elements) 3826; root system 142; rots 424; sampling 2337; seed—(collection) 3759, (germination) 1048, 1956, 2059, 3751, 3767, pp. 5–15, (insect damage) 4030, (provenance) 2909, (storage) 3762, (stratification) 2926; seedbed requirements 1808, 3684; silvicultural technique 198; slash disposal 1175; snowbreaks 3008; spacing 2084, 2089–90; stand development 552; taper tables 520; thinning 1201; transpiration 65; transplanting 2938; tree classes 2347; vegetative propagation 1151, 1155, 1163, 2942; volume tables 521, 3204–6; **wood:** anatomy **607**, **4165**; assortments **348**; chemistry **2438**, **2442**, **2446**, **4212**, (lignin) **642**, **1527**, **4207**; floating properties **2213**; mine timbers **2488**; pathological resin canals **2412**; physical properties **3305**; plywood **1644**; preservative treatment **2542**; pulp **1701–2**, **3461**, **4376**; resonance wood **2526**, **3312**; sap stain 971; seasoning **762**; shrinkage **2335**; tanstuffs **2622–3**, **3482**; thermoplastic behaviour **3324**; yield 4110, (tables) 1443, 2340
Picea abies var. *fissilis* **3312**
P. ajanensis see *P. jezoensis*
P. engelmanni: barkbeetles 494, 1392, 2307; in Iceland 2028–9, 2046, 2668; snowbreaks in Norway 3008; volume increment 545
P. glauca: effect of fire 2831; diseases 423, 1386, 2071, 2254, 3975–6; ecology in Alaska 1990; frost damage 3944–5; in Iceland 2029; insects 1386, 1404; natural regenerations, measures to ensure 2017, 2874; nursery stock, storage 2960; oil from cones **4425**; phenology 2851; planted under girdled hardwoods 1193; pyrolysis of bark **4399**; resistance to herbicides 258; seed treatment 2056, 2926; **wood:** chemistry **1528**, **3331**; pulping **3460**
P. glehnii 420, 2819, 3100, **3423**
P. hondoensis see *P. jezoensis* var. *h.*
P. jezoensis (*ajanensis*) 104, 2820
P. jezoensis var. *hondoensis* 104, 3099
P. komarovii 104
P. mariana: frost resistance 3944; insects 1404; manipulation of water level in favour of 302; natural regeneration 2831, 3732; needle oil **4425**; phenology 2851; seed collection 2916; **wood:** chemical barking **2189**; chemistry **2430**, **3331**, (lignin) **3338**, **4206**
P. microsperma 104
Picea omorika: cones and seed 1136; distribution 1020; in Germany 1109; in Jugoslavia 1108, 2815; vegetative propagation 1155
P. orientalis 3670
P. pungens 1108, 2926
P. rubens 1099, 3944, **4217**
P. sitchensis: afforestation of—(gravel spoil) 2100, (heathland) 1179; chlorophyll production 3604; disease 3446; ecology in Alaska 1990; in Iceland 2028–9, 2668; in mixture 3821; in Norway 2027; in Slovenia 209, 1108; insects 1356, 1390–1, 2303; litter 2730; morphological variation 993; nursery practice 265, 1140–2, 3767, 3772; nutrient requirements 2822; pigeon damage 1354; planting stock, grading 1171; provenance 1873; resistance to herbicides 256, 258, 1140, 1145; rooting depth 3946; seed germination 3767, pp. 5–15; thinning 2986, 3834; **wood:** bending **4265**; cigar-box p. 115; grading rules **1682**; moisture content **4181**; strength properties **683**, **1513**
P. smithiana 29
Picralima nitida **2631**
Pinaceae 3595, 3669
Pinacopodium **4168**
Pinus spp.: breeding 961; from Mexico and British Honduras 996; germination tests pp. 5–15; in Argentina 1114; resistance to herbicides 256; transpiration 64; wood chemistry **1538–9**
P. albicaulis **643**, **4424**
P. aristata 444, **603**, 2029, 2046
P. ayacahuite 3181
P. banksiana: afforestation of strip-mined land 2968; damping off 1322; 3785; direct sowing 275, 2078; insects 3165; natural regeneration 2016; phenology 2851; plantations in Pennsylvania 1112; planting with fertilizers 2087; porcupine damage 4006; reproduction and age of parent 2845; resistance to herbicides 3082; response to release 1209; root respiration 2765; seed extraction 2917; site quality 3226; thinning 1202; tissue cultures 3629; watering 255; **wood:** chemical barking **2189**; chemistry **3331**; floating properties **2212**; identification **603**; pulpwood storage **1698**
P. bungeana 210
P. canariensis 1334, 1985, **4159**
P. caribaea: barkbeetles 2306; diseases 416, 1334; effect of fire on 3070, 3956–7; general account 1894; injury—(drought) 1284; (glaze storm) 3741; identified on air photos 1450; in Angola 1111; in Delaware 2885; in Nyasaland 2035; resin tapping 341, 3863; resistance to herbicides 3083; response to fertilizers 3772; site quality 4094; spacing 3805; underplanting in hardwoods 297, 2120; **wood:** properties **3284**, **3326**; pulping **3466**

Pinus cembra: frost resistance 3942; in Iceland 2029, 2668; in Jugoslavia 1108; pollen dispersal 3688; snowbreaks in Norway 3008; wood identification **603**
P. cembra var. *sibirica* see *P. sibirica*
P. clausa 153, 2838, 3693
P. contorta var. *latifolia:* direct sowing 3796; in Germany 1109; in Iceland 2029; injuries—(frost) 3947, ('redbelt') 3941, (of all kinds) 374; insects 468, 2294, 3135, 3159, 4024–5, 4048; litter 2730; pollen production, induced 2913; resistance to herbicides 258; silvicultural systems 1997; suggested for Denmark 3745; thinning 3577; volume increment 545; **wood:** chemistry **2431**; mine timbers **584**; seasoning of poles **4353**; tannins **4403**
P. coulteri 3619
P. densiflora: cold resistance 2819–20; crown-spread/diameter ratio 529; disease 3090; hybrids 2783; insects 3165; mortality of reproduction 2843; natural regeneration 3842; seed—(bagging) 1867, (germination) 1049; soil requirements 139, 2738; spacing 284; transpiration 2764; vegetative propagation 269, 2775; **wood:** heartwood formation **3302**; natural durability **3423**
P. densiflora × *P. thunbergii* 269
P. echinata: crossed—(with *P. taeda*) 83, 3748, (with *P. rigida*) 2042; effect of flooding 1287; increment 159, 2316, 3814; intolerant of *Robinia* 1194; littleleaf disease 512, 1411, 3190–1, 2316, 3192; measurement of d.b.h. 3195; planting methods 286, 2086; post-logging mortality 3051; resin 1731; response to release 308, 2992, 2295; seed treatment 2058; site quality 4093; stacked volume 4089; thinning 1203; underplanting in hardwoods 297; wood properties **1513**
P. eldarica 1105
P. excelsa: climatic zone 169; crossed with *P. strobus* 2775; in Germany 1109; increment and yield 3231; litter 29; plantations in Darjeeling district 2892; rusts 2269, 2270
P. gerardiana 169, 2892
P. grandis 380
P. halepensis: balsam **4422**; charcoal **2621**; diseases 1334, 3998; in Angola 1111; in France 128; in Greece 2095; in Jugoslavia 235, 2973; resin tapping **815**, 1240, **3494**; spacing 2973; tolerance of acid soil 1943
P. halepensis var. *brutia* **4216**; see also *P. eldarica*
P. heldreichii var. *leucodermis* (*P. leucodermis*): 235, **1729**, **4422**
P. hunnewelli 3620
P. jeffreyi 1109, 1855–6, **3487**
P. jeffreyi × *P. coulteri* 2913, 3619
P. khasya 214, 1111, **2638**, **2652**
P. koraiensis 2908
P. krempfii var. *poilanei* 1895
Pinus lambertiana 185, 3733
P. latifolia 84
P. laricio see *P. nigra*
P. leiophylla 2271, 4049, **4423**
P. leucodermis see *P. heldreichii* var. *l.*
P. longifolia: climatic zone 169; in Madagascar 214; increment and yield 3231; litter 29; resin tapping 3860; turpentine **1730**, 3860; **wood:** decay **749**; spiral grain **4364**
P. maritima see *P. pinaster*
P. massoniana **603**
P. merkusii 273, 296, 3699, 3861
P. montana see *P. mugo*
P. montezumae **4423**
P. monticola: crossed with *P. strobus* 83; direct sowing 276; diseases 513, 3987–8; litter 2730; snow damage 380; vigour classes 3727–8
P. mugo (*P. montana*): breeding 2902; effect of lichen on 3684; grafting 1163, 2775, 4754; in Iceland 2029, 2046, 2668; mine timbers **2488**; resistance to herbicides 258; variation 998; viability of pollen 1046
P. mugo var. *mughus* 235
P. mugo var. *pumilio* 507
P. muricata 1111
P. nigra s.l.: afforestation in Serbia 3809–10; balsam **4422**; disease 3123; in Jugoslavia 235; physiological maturity 144; provenance trials 2039–41; resin tapping 1239, **1728**, **3494**; taxonomy 1896
P. nigra var. *austriaca:* direct sowing 3808; germination 1048; in Germany 1109; insects 3165, 4051; mine timbers **2488**; resistance to herbicides 258; soil—(moisture under) 3849, (treatment) 3786; turpentine **3495–6**
P. nigra var. *calabrica:* bird life 1842; cone production, stimulation of 2914; direct sowing 3808; effect on soil 1026; in Germany 1109; increment 4099; insects 3165; mine timbers **2488**; resin tapping 1240; seed germination pp. 5–15; site quality in New Zealand 535; volume tables 1420
P. nigra var. *caramanica* (*P. pallasiana*) 2883, 2965, **4216**
P. oocarpa **4423**
P. pallasiana see *P. nigra* var. *caramanica*
P. palustris: crown size 155, 1429; disease 1334; identification on air photos 1450; in Delaware 2885; injuries—(fire) 1950, 3957, (glaze storm) 3741, (grazing) 447, 3854; natural regeneration 191; on strip-mined land 3814; resin tapping 3863; response to release 3840; seed—(germination) p. 9, (production) 3752; site quality 1431; underplanted in hardwoods 297, 2120
P. parviflora 3620
P. patula 214, 1111, **1604**, 2892
P. peuce 1109, **1728**, 2775, 3620, **4422**
Pinus pinaster: afforestation—(alkaline soils) 2725; (in Spain) 1183–4; bud pruning 3841; disease 1334; in Germany 1109; in Madagascar 214; juvenile foliage 2771; natural regeneration and altitude 129; races 80, 3949; resin tapping 1237–8, 3015; response to fertilizers 3949; seed—(collection) 1131, (storage) 244, (treatment) 244, 2055, 3776; **wood:** cell wall **4169**; flooring **1602**; mine timbers **2488**; properties **4159–60**; pulping **2590–1**
P. pinea: altitudinal range 1184; artificial regeneration 2021; damping off 3091; diseases 1334, 3092; due fixation 2158; in Jugoslavia 235; mycorrhiza 1944; seed production 150; wood identification **603**
P. ponderosa: bark extractives **1720**; climatic requirements 18; crossed with *P. latifolia* 84; direct sowing 3795; diseases 3996–7; failure in Arkansas 3741; grazing under 2170–1; increment—(forecasting) 2339, (volume) 545; injuries—(deer) 451, 2282, (fumes) 2225, (of all sorts) 374, (rodents) 2278; insects 3165; interception 2744–5; litter 2730; natural regeneration 185, 1090; pollen production, induced 2913; pruning 1210; resin tapping 1731, 3864; root system 1947; seed storage 2053; **wood:** identification **603**; ignition **3314**; preservative treatment of stakes **3407**; pulp **4381**; seasoning **1668**; strength properties **633**, **1513**
P. ponderosa var. *scopulorum* 3996
P. pseudostrobus 3181
P. radiata: disease 1334; failure in Japan 210; fertilizer experiments 2982, 3949; in Angola 1111; insects 469, 1394, 1397–1400, 1655; microclimate under 11; mycorrhiza 1943; natural regeneration 3824; on spoil mounds 2099; planting methods 229; pruning 317–8, 3841; seed—(extraction) 239, (production) 3753; sexual dimorphism 147; shelterbelts—(in Italy) 2159, (in New Zealand) 2152; site quality in New Zealand 535; thinning 3824; vegetative propagation 268, 1152–3; volume—(of forked trees) 1426, (tables) 3207; **wood:** building timber **1599**; cell wall **4169**; grading **2585**; identification **603**; preservative treatment **1637**; seasoning **767**; shingles **1604**; yield 1462
P. resinosa: afforestation of strip-mined land 2968; artificial regeneration 1099; biopotentials 2770; damping off 2069, 3784; direct sowing 2078; disease 3055; frost resistance 3943; groundwater relations 2848; in mixture 2119; insects 1370, 2293, 2298, 3165, 4044; litter 2731; natural regeneration 193; planting methods 1173; planting stock, storage 2960; poisoning 313,

2315; reaction to herbicides 2066, 4019; response to release 310, 2997; seed—(dispersal) 154, (production) 2912; slash disposal 1175; thinning 305–6, 3224; volume table 3208; **wood:** strength properties **1514**

Pinus rigida: afforestation of strip-mined land 2968; effect of—(fire) 3957, (flooding) 1287; hybridization 2042; in Japan 210; intolerant of *Robinia* 1194; resin **1731**; resistance to herbicides 258; site quality 4093

P. rudis 3181

P. sabiniana 2913

P. sibirica (*P. cembra* var. *s.*) 1080, 3006

Pinus 'southern': artificial regeneration 2876; disease 1150, 3770; seed storage 2054; spacing 2804; **wood:** extractives **785**; green mould protects **4339**; preservative-treated **733**; pulp **4380**

P. strobus: cambial activity 3700; crossed with—(*P. excelsa*) 2775, (*P. monticola*) 83 (*P. peuce*) 2775; damping off 2070; direct sowing 2078; diseases 441–2, 1320, 1331; frost injury 3944; groundwater relations 2848; in Germany 1109; in Italy 206; in Japan 210, 2884, in Jugoslavia 1108; in mixture 2119; increment 1442; insects 3165, 4044, 4047; intolerant of *Robinia* 1194; litter 2731; natural regeneration 192–3; phenology 2851; plantations—(in Arkansas) 3741, (in Michigan) 1113; planting methods 1173; planting stock, storage 2960; reaction to herbicides 259, 399–400; response to—(fertilizers) 4071, (release) 311; seed—(bagging) 1867, (collection) 3756, (dispersal) 2839, (germination) 1048, pp. 5–15; seedbed requirements 192, 2015; slash disposal 1175; thinning 1205, 1461; tissue cultures 3629; volume table 3208; **wood:** anatomy **4165;** barking of posts **2459**; identification **603**; mining timbers **2488**

P. sylvestris: afforestation of sands 2102, 2724, 2883; agri-silviculture 2905; balsam **4422**; beeting 2083; bird life 1842; breeding 2902, 3617; cambial activity 1860; chemical constituents 3595, 3606; chlorophyll production 3605; climatic requirements 14, 539–42; cone—(form) 2780, (oil) **4425**, (size) 2915; crown size 157; damping off 1149, 1322; diseases 425, 1329–30, 1334, 1340, 1342, 3095–6, 3978–9; effect on soil fauna 1819, 1822; failure in Japan 210; felling rules in U.S.S.R. 1080; fertilizer experiments 2981, 3772; grafting — (interspecific) 1163; (natural) 1035; group regeneration 3683; in Iceland 2028–9, 2668; in India 2892; in Jugoslavia 235; in mixture with Oak 2978; in Spain 1184; increment 156–7, 539–42, 3231–2, 4104; increment cores 2335; injury—(deer) 2305, (elk) 2280, 4008, (pigeon) 1359; insects 491, 2305, 2308, 3155, 3165, 3167–8, 3178, 3979; length of growing season 13, 3562; log grades **348**; log scaling 528; logging studies **3880, 3882, 3895**; morphology 993, 996; mulching 2937; mycorrhiza 3681, 3684; natural regeneration 186, 1089, 2010, 2126, 2844, (effective distance) 2872; nutrient deficiency 3948; osmotic value 1852; photoperiodism 81–2, 136; physiological maturity 144; plantation technique 1099; planting stock—(grading) 2939, (heeling in) 2082, (storage) 3798; pollen production 1045; provenance trials 1116, 2898–9, 3747; pruning 156, 2137; rainwater under 61; replacement of lost leaders 1957, 2832; resin tapping 1239, **1728**, 3015, 3864–6, p. 241; resistance to herbicides 256–8, 1140, 1145–7, 3081–2, 3778–81; response to fertilizers 1141; root—(competition) 3683, (forking) 3681, (system) 142; seed—(collection) 3746, 3756–7, (germination) 1048, 2059, pp. 5–15, (production) 1045, (quality and cone size) 2915, (storage) 3757–8, 3762, (supplies in U.S.S.R.) 2907, (treatment) 3763; seedbed requirements 1808, 1958, 2844, 3684; silviculture, monograph on 1995; site requirements 220; slash disposal 1175; sowing—(direct) 274, 2078, (summer) 2079; spacing 2961; stand structure 551; taper tables 520; thinning 304, 550, 2361, 2989; transplanting 2938; turpentine **814, 3495**; variation 1871; vegetative propagation 1151, 1163, 3794; volume—(determination) 3211, (tables) 3204–5; **wood:** anatomy **4164**; assortments **348**; blue stain 971, **2555, 4335**; charcoal manufacture **787**; chemistry **2446**, (heartwood) **644**, (lignin) **3336**; floating properties **2213**; identification **603**; improved wood **2552**; mine timbers **2488**; pathological resin canals **2412**; physical properties **3305**; preservative treatment **742, 2545**; yields 3231, (tables) 2340

Pinus sylvestris var. *hamata* 3670

P. taeda: accumulation of P^{32} by roots 1853; cone crops, forecasting 2048, 2911; crossed with—(*P. echinata*) 83, 3748, (*P. rigida*) 2042; damping off 2070; d.b.h./crown ratio 1429; disease 416, 1411, 3191; in Angola 1111; injury—(fire) 1297, 3956–7, (glaze storm) 3741, (logging) 3051; litter 1806; mulching 3815; natural regeneration 1091, 2014; on strip-mined land 3814–5; planting methods 1174, 2086; provenance trials 3748; response to release 2992; resistance to herbicides 3083; root growth 1034, 1411; seed—(germination) p. 9, (production) 2048, (treatment) 2058; seedling development 159, 1287; site quality 533, 4093–4; succession 2853; translocation 938; underplanted in hardwoods 297, 2120; volume—(posts) 4086, (stacked pulpwood) 4089; **wood:** chemistry **2430**; mine timbers 3261; New Zealand grown **4231**; strength properties **1512, 2424, 3326, 4231**

Pinus thunbergii: cold resistance 2819-20; disease 1334; germination tests 1049; hybrids 2783; insects 3177; shelterbelts 3852; sugars in seeds and seedlings 2768; transpiration 2764; turpentine **3497**

P. torreyana 2913

P. virginiana: afforestation of strip-mined land 2968; diseases 3118, 3995; distribution 1966; mine timbers 3261; mycorrhiza 2825; response to release 308; thinning 2991; underplanting in hardwoods 297

P. wallichiana see *P. excelsa*

Piptadenia africana **4265, 4332**

P. peregrina **811**

Pisonia grandis 3673

Pistacia lentiscus **827, 2621**

P. vera 2958

Pittosporum 1914

Plagiosiphon 3658

Platanus spp. 1345

P. acerifolia 3115

P. occidentalis 2975, 3112, 3814, 4000

P. orientalis 2268, 2890

Platymiscium sp. **3382**

Platyosprion **1492**

Podocarpaceae 3669

Podocarpus 1030, **1540, 2402**

P. andinus 1040

P. dacrydioides **2389**

P. ferrugineus **2389**

P. hallii **2389**

P. lambertii **2408**

P. macrophyllus 3595

P. neriifolius 3187

P. spicatus **735, 2389**

P. totara **2389**

P. variegatus 141

Poeciloneuron indicum **3310**

Poga oleosa **2614**

Populus: breeding and hybridization 957, 962, 2785, 2904, 3625–8; congress 1790, 3550; flowering habits 1042; in America 1919–21, 2809; manuals 118–9; sex and leaf colour 2835

Populus spp.: afforestation of river banks 1185; cytology 957; diseases 417, 433, 3994, 4001; in England 1790; inflammability of leaves 3061; injuries from fumes 383; insects 1356; key to Spanish spp. 1008; photoperiodism 137, 3625; plantation technique 287, 324, 1199, 1785, 2127–8; raising from seed 251–2; soil requirements 3846; vegetative propagation 287, 1160–1; **wood:** chemistry **631, 3332**; pulping **2602**; tension wood **1526**

P. alba 251–2, 467, 962, 2965, 3627

P. × *Populus* '*A.M*'. 2273, 2312

P. angulata 2164

Populus balsamifera 2965
× *P. berolinensis* 1161, 3626
P. '*canadensis*' afforestation of sands 2965; in Jugoslavia 326, 1108; insects 1379, 4041; virus disease 4004
P. candicans 60, 1161, 2274, **3332**
P. canescens 1155, 2814, 3627; hybrids of 3625
P. charkowiensis **3332**
P. ciliata 488
P. deltoides (incl. *P. monilifera*): afforestation of strip-mined land 2969; disease 433; in Argentina 2273; in Bechuanaland 213; in Nyasaland 2035; in Santa Cruz 2164; pollen dispersal 3688; response to weed control 1311; vegetative propagation 1161; volume increment 545; **wood:** chemistry **1536**
P. '*eucalyptus*' **631**
P. grandidentata: chemical control 1307; decomposition of litter 24; management in mixed stands 2005; natural mortality and cull 3220; pioneer species 1074; wood properties **3345**
P. '*grandis*' 417
P. laurifolia 242, 3134
× *P. marilandica* **3475**
P. maximowiczii 433, 3626
P. monilifera see *P. deltoides*
P. nigra 433, 1161, 1343, 2164, 2273, 2965
P. nigra × *P. canescens* 3625
P. nigra var. *italica* 437, 488, 3626, 3688, 3847
P. nigra var. *sempervirens* 3847
P. occidentalis see *P. sargentii*
× *P. petrowskyana* 3061
× *P. regenerata* **631**, 2101
× *P. robusta* 417, 2100, 2725
× *P. rogalinensis* 3627
P. sargentii (*P. occidentalis*) 1961
× *P. serotina* 1161
P. '*setchuensis*' **3332**
P. sieboldii 242
P. simonii 242, 326, 433, 437, **3332**
P. tremula: alternative host to Pine rust 1342; androgynous catkins 1043, 3687; cambial activity 1051, 1860; hybridization 962, 3625, 3749; in Iceland 1936; osmotic value 1852; pioneer on steppe 3705; raising from seed 251–2; soil requirements 2000; Swedish triploid in Canada 2776; volume tables 3210; **wood:** abnormal **1499**; mine timbers **2488**; pulp **1702**; yield tables 3210
P. tremuloides: chemical control 313, 1307, 2997, 3964–5; crossed with *P. tremula* 3749; decomposition of litter 24; diseases 442; disking to promote regeneration 195, 1097; dwarf variety used in breeding 2776; ecology 1989; flowering habits 1042; injuries—(moose) 2281, (of all kinds) 373; insects 2299; increment 3345, 3566; management in mixed stands 2005; phenology 2851; site quality 2331; soil requirements 3566, 3828; thinning 3839; **wood:** chemical barking **2189–90**; chemistry **1529**, **2444**, **3331**; chips as soil improver **721**; floating properties **2212**; properties **3345**; pulping **2600–1**, **3460**, **3466**
Populus trichocarpa 2028–9, 2274, **3870**, **4354**
P. '*virginiana typica*' **3332**
P. wislizenii 1161
× *P. wobstii* 3626
Pouteria spp. **4225**
Prioria copaifera **4161**
Prosopis juliflora (*glandulosa*): afforestation in N.W. Frontier Province 1189; chemical control 336–7, 1307, 2173, 3078, 3966; dune fixation in India 2107–8; seed treatment 246
P. ruscifolia **3490**
Protea abyssinica 1886
Prunus spp. 396
P. amygdalus 2852
P. avium 1031, 2057, **2488**
P. fruticosa 3705
P. nepalensis 2045
P. padus 1852
P. serotina: in Jugoslavia 3810; leaf morphology 1863; mill study 3260; taxonomy 2808; underplanting 1194; winter host of Peach aphid 916
P. spinosa 1213, 3705
P. tenella (*Amygdalus nana*) 3705
Pseudolachnostylis maprouneifolia 3637
Pseudosamanea guachapele **3283**
Pseudospondias microcarpa **2185**
Pseudotsuga spp. pp. 5–15
Pseudotsuga taxifolia: afforestation of—(heaths) 292, 1179, (spoil mounds) 2099; bark, uses and properties **795–6**, **2627–8**, **3481**, **3487**, **4409–10**; damping off 2070; diseases 419, 424, 437, 2256, 3122, 3946; drought effects 539, 4104–5; in Czechoslovakia 2866; in England 200; in France 202–3, 2031; in Germany 2880; in Ireland 1107; in Jugoslavia 1108; in mixture 1196; in Portugal 201; in Ukraine p. 116; injuries—(bear) 452, (deer) 2282, (herbicides) 258, 1146, 3778, (of all sorts) 374, (pigeon) 1354, (rabbit) p. 114; increment 539, 545, 4104–5, (forecasting) 2338; insects 1393, 4021, 4029; litter 2730; log grading **2583–4**; mineral nutrition 3058; morphological variation 993; mulching 2932; planting season 3807; planting stock, grading 1171; pollen dispersal 3688; provenance 221–2, 1118–20, 1873, 2901; pruning 1210, 2138; seed germination 1048, 3958, pp. 5–15; seedbed protection 265; seed-trees, protection p. 238; site quality in New Zealand 535; taxonomy 105; vegetative propagation 1163, 2942, 3788; volume determination 3211, (tables) 3218, 4079; **wood:** anatomy **1490**, **4230**; chemical barking 3870; chemistry **2430**; fibreboard **783**, **1709**, **3474**; grading rules **1682**; hydrolysis **1712**; mill studies **775**; mine timbers **584**, **2488**; natural durability **3423**; plywood **583**, **695**; preservative treatment **733**, **1640**, **1642**, **2537**, **2550**, **3407**; seasoning **769**, **1664**; sleepers **1642**; specific gravity **2421**; strength properties **1513**, (of decayed wood) **632**, **3425**, (of 2nd growth) **633**; veneer **693**
Psidium guajava 3984
Pteridium aquilinum 140, 1949
Pterocarpus angolensis 212, 1886, 4081, **4223**
P. dalbergioides 1103, **1490**
P. marsupium **761**
P. santalinus **646–7**
P. soyauxii **596**
Pterygota sp. **594**, **4332**
Punica granatum 56
Pycnanthus kombo **1482**
Pyrus communis 1030, 2828
P. malus (*Malus communis*) 940, 1031, 2575, 3688

Quercus 77, **602**, 1163, **1529**
Quercus spp.: afforestation of alkaline soils 2725; chemical control 399, 1224, 1307, 3075; diseases 432, 440, 1344, 3104–10, 3985–6, (in India) 3980, (spotted from the air) 1336, 3987; in Iraq 110; insects 917, 923; lignin **3336–7**; natural root grafts 1208; response to trace elements 3826; seed germination pp. 5–15; site quality for American spp. 2332–4
Q. acuta 1157
Q. acutissima 3109, **4172**
Q. aegilops **2624**, **3484**, 3691
Q. alba: acorn production **1743**; chemical composition of leaves 900; chemical control 313, 3963; planted under cover 1194; on strip-mined land 2975; root distribution 1038; site quality 1433–4; **wood:** cooperage stave table 3219; identification **4163**; strength properties **1513**
Q. borealis: acorn production **1743**; direct sowing 277, 3817; disease 1333, 2267; ecology 1928; in Hungary 2887; in Italy 2888; in Jugoslavia 1108; in Russia 2889; increment—(and drought) 539, (and light intensity) 3682; planted under cover 1194; response to fertilizers 3825; **wood:** identification **4163**; mine timbers **2488**; properties **2414**, **3306**, (strength) **1513**
Q. calliprinos 1944
Q. cerris: bark volume 1419; crossed with *Q. suber* 85; in France 205; volume tables 2323, 2328; yield tables 2342–4
Q. cinerea **3483**
Q. coccifera **2621**, 3676
Q. coccinea 205, **1743**
Q. conferta see *Q. frainetto*
Q. crispula **698**
Q. deamii 3623
Q. dentata 3109
Q. dilatata 169, **707**
Q. ellipsoidalis 1209
Q. falcata 3120, 3254, 3960
Q. frainetto (*Q. conferta*) 3710

Quercus garryana **4354**
Q. glauca 1157
Q. ilex 169, 2344, **2621**
Q. incana 169
Q. ithaburensis 1944, 3677
Q. kelloggii **4354**
Q. laevis **2598**, **3481**, **3483**
Q. lamellosa 2892
Q. lineata 2045, 2892
Q. macrocarpa 1074, 1108, 1863
Q. marilandica: bulldozing 2122; chemical control 314–5, 399, 1307, 2121; identified on air photos 1450; poisoning 1207
Q. montana **1742–3**
Q. mühlenbergii **1742**, 1932
Q. myrsinaefolia 1157, 2765
Q. nigra 3254
Q. nuttallii 3254
Q. oglethorpensis 133
Q. palustris 1108, **2414**, 3107–8
Q. petraea see *Q. sessiliflora*
Q. phellos 3254
Q. prinus **1742**
Q. pubescens 1383, 3810
Q. robur s.l.: acorns—(dispersal) 1840, (germination) 1098, 3767, (production) 1045, (storage) 241, 2918–20, (supplies in U.S.S.R.) 2907, (transport) 2052, 2918–20; anomalous flowering 1044; conversion of pure to mixed stands 188, 3726; coppice 561, 1453, (strips as shelterbelts) 1221; diseases 942, 1333, 2941; drought effects 539; felling rules 1080; free-grown, increment and yield 1445; group regeneration 1085; in mixture with conifers 1196, 2977–8; increment 539, 4101; insects 486, 1383, 1660, 3171; length of growing season 13, 3562; osmotic value 1852; plantations in N. Caucasus 1105; planting stock, heeling in 2082; pollen output 1045; regeneration in N. Russia 2006; root system 142, 1039; soil fauna under 904; spacing 1176, 3737; underplanting 2115; virgin stands 189; volume tables 3204; **wood:** abrasion resistance **4195**; anatomy **3290**; bending **1571**; diffusion of water vapour **2418**; properties **2414**; seasoning **2575**
Quercus robur s.s.: cambial activity 1051, 1859–60; chemical composition of seedlings 3606; composition of rainfall under 61; direct sowing 328, 1222; distribution in Sweden 1934; insects 482; management in Germany 2008; prostrate form 1004; provenance trials 226–7; response to release 312; root system 3679; seed production, age of 2833; steppe afforestation 2161; tissue cultures 3630; under Spruce 2116; **wood:** assortments and log grades **348**; mine timbers **2488**
Q. robur var. *fastigiata* 3575
Q. semecarpifolia 169, **707**
Q. semiserrata 2892
Q. serrata **3298**
Q. sessiliflora: afforestation in Jugoslavia 3810; cambial activity 1051; ecology 1933–4; in Czechoslovakia 1061; in Macedonia 3710; interspecific grafts 1163; management in Germany 2008; provenance trials 226; seed production, age of 2833; sown with rye 2906; tissue cultures 3630; volume table 2344; **wood:** assortments and log grades **348**; mine timbers **2488**; see also *Q. robur* s.l.
Quercus stellata 1164, 1307, 2050
Q. stenophylla 1157
Q suber: crossed with *Q. cerris* 85; diseases 2261, 2266; distribution in Portugal 1234; economic study 572; in U.S.A. 1235; polyspermy 3607; regeneration after burning 2181; seed eaten by rodents 1168; statistics from Spain **2625**; **wood:** chemistry **1531**, **4214**; decay resistance of cork **4408**
Q. toza 1333, 1454, 2804
Q. variabilis 2875
Q. velutina 1074, **1743**, 1863
Q. virginiana 1164

Ranales 1861
Ranunculaceae 2800
Rhamnus frangula 1852
R. zeyheri **2391**
Rhizophora mangle 2841, 3695, **3281**
R. racemosa **3281**
Rhododendron 108, 1213
R. arboreum 169
R. molle **810**
R. ponticum 2257
Rhus spp. **1722**, 1899
R. dura 483
R. javanica **4172**
R. ovata 1935
R. radicans 1310
R. succedanea 3103
R. toxicodendron 399, 402, 3085
R. typhina **4407**
Ribes spp. 404, 1308, 1341, 1852
Ricinodendron africanum **2185**
R. rautanenii **2604**, **4332**
Ricinus communis **1694**
Robinia pseudoacacia: afforestation of strip-mined land 2968–9; cambial activity 1051, 1858; chemical control 399, 406, 2250; disease 3124; in Germany 323; in Greece 326, 2095; in Hungary 199, 2725; in Israel 2891; in Italy 1182, 3238; in Jugoslavia 322, 2154, 2979, 3810; injury from fumes 383; protection of seedbeds from frost 265; response to cultivation and mulching 3816; seed treatment 2924; site requirements 3675, 3741; soil improver 900; underplanting 1194; vegetative propagation 271, 1155, 2947–8; wildlife management 932; **wood:** mine timbers **2488**; tyloses **4172**; yield 3238
Rosa spp. 331, 399, 408, 1307, 1048
Royena fischeri **756**
Rubus spp. 396, 400, 1225, 1307–8

Salix spp.: afforestation of river banks 1186; chemical control 397, 399, 401, 1307, 1315, 2248–9; in Alaska 1990; injury from fumes 383; insects 467; key to Spanish spp. 1008; morphology and taxonomy of Portuguese spp. 1009
Salix acutifolia 2905
S. alba var. *caerulea:* diseases 2273, p. 350; in E. Punjab 2893; nematodes 2312; plantation technique 1790; shelterbelts in Santa Cruz 2164; vegetative propagation 2943; **wood:** artificial limbs **712**; bats 1790
S. '*americana*' 1384
S. aurita 1852
S. caprea 1046, 1877–8, 2164, **2488**
S. fragilis 2965
S. repens var. *rosmarinifolia* 1852
S. tetrasperma 2962
S. viminalis 2164
Sambucus nigra 1046, 1051
S. racemosa 1048
Santalum album 183, 1016, 1132, 3764
Sarcocephalus diderrichii **2403**, **2614**
S. xanthoxylon 1918
Sassafras albidum **2548**, 3102
Schima noronhae **4326**
Schinopsis lorentzii 3855
Schinus molle 1346
Schleichera oleosa 2896
Schotia 3658
Schrebera koiloneura **756**
Sciadopitys verticillata 1018
Scorodophloeus 3658
Sequoia 1897
S. gigantea 3595, 3826
S. sempervirens: acorns found buried in **1680**; chemical constituents 3595; gall disease 3193; injury—(bear) 2279, (pack rat) 3127, (squirrel) 2279; histology 2787; **wood:** anatomy **4165**; cigar boxes p. 115; deterioration in cooling towers **2516**; hydrolysis **1712**; plastics **1714**; plywood cores **1585**; preservative treatment **1640**; pulp **3462**
Serenoa repens 402, 1290, 3080
Sesbania cinerascens 3000
S. grandiflora 1218
Shepherdia argentea 56
Shiia spp. **3879**
S. sieboldii 2765
Shorea albida 4120
S. argentifolia 4120
S. leprosula **2565**
S. robusta: natural regeneration 2652; **wood:** ionic diffusion in **1507**; plastics from bark **2626**; storage of poles **755**, **1653**; thermal properties **624**
Sickingia sp. 3537
Simmondsia chinensis **3502**
Sindora spp. **1477**, **2391**
Sladenia 1925
Sonneratia griffithii 4028
Sophora chrysophylla 1132
S. japonica 2253, 3810
S. tetraptera 2890
Sorbus spp.: chemical control 397; germination 1048, p. 9; mine timbers **2488**; natural hybrids 1915–6
S. americana 2281
S. aucuparia 1048, 1852, 3124, 3160
S. domestica 1048

Staudtia spp. **1482**
Sterculia africana **756**
S. oblonga **4332**
S. setigera **1738**
S. tragacantha **2185, 2614**
Stillingia 1904
Stoebe vulgaris 1227
Strophanthus spp. 965, **1725**, 2930
S. eminii **756**
S. sarmentosus 2075
Strychnos 1005
S. heterodoxa **756**
S. icaja 965, **2634**
Stryphnodendron barbatimao **4406**
Styrax leprosus 2810
S. subargenteus 2810
Swartzia pinnata 950
Swietenia spp. **4182**
S. macrophylla: artificial regeneration in Mexico 2878; direct sowing 2957; in E. Pakistan 1103; in the Philippines 3743; plantation technique 1101; planted under *Casuarina* 1192; **wood:** anatomy **2403**; plywood **3382**; specific gravity 3537
S. mahagoni 1192
Symphoricarpus occidentalis 331, 399, 930, 1307, 3075
S. orbiculatus 1307
Symplocos 1924
Syncarpia laurifolia 1132, **1486**

Tabebuia donnell-smithii 2022
Talbotiella 3658
Tamarindus indica 3094, **3504**
Tamarix spp. 329, 337, 1940, 2176, 2725
T. gracilis 329, 2176
T. hohenackeri 329
T. pubescens 329
T. ramosissima 329, 2176
Tarenna incerta 2896
Tarrietia utilis **762, 2394, 4332**
Taxaceae 3595, 3669
Taxodiaceae 2772, 3595, 3669
Taxodium 1897
T. ascendens 944
T. distichum 1108, 3603
Taxus spp. p. 9
T. baccata: chemical constituents 3593–4; climatic zone 169; disease 2257; vegetative propagation 1154; **wood:** anatomy **3290**; chemistry **4218**
T. canadensis 2281
T. cuspidata 2257
Teclea spp. 965
T. glomerata **756**
Tectona grandis: diseases 1327; *dona* technique 2077; effect on soil 1102, 2723; green manuring 298; in Egypt 2895; in Pakistan 1103; injuries: (fire) 3069, (giant snail) 508; insects 464, 500; natural regeneration 1092, 3685; planting stock raised in leaf cups 2077; thinning 3832; **wood:** anatomy **1490**; cooperage **707**; sawdust as fuel **2529**; strength properties **1500**
Terminalia belerica 1850, **2563**
Terminalia bialata **3290**
T. chebula **2626**
T. superba **2185, 3285**
T. tomentosa 463, **707, 1490, 2529, 2563**
Tessmannia anomala **2639**
Tetraclinis australis **2403**
Tetrazygia eleagnoides **1641**
Theaceae 120
Theobroma cacao 3145–6, 3972
Thevetia neriifolia **1736**
Thuja **608, 1494**
T. occidentalis 2294, 3595, 3944, **4425**
T. plicata: failure in Japan 210; in France 202; in Germany 1109; in Norway 2027; in Poland 3740; injury from herbicides 1146; litter 2730; mineral nutrition 3058; on spoil mounds 2099; vegetative propagation 953, 1154; volume table 3218; **wood:** anatomy **1490**; chemical barking **3870**; chemistry **645, 2430, 3342**; grading rules **1682**; seasoning **768**; thermal decomposition **3313**; use of wood waste p. 241
Thujopsis dolabrata: chemical constituents 3595; essential oil **4426**; nutrient requirements 2821; soils 2735, 2738; vegetative propagation 2945
Tilia spp.: cambial activity 1860; disease 434; leaf development 3700; root system 142; under Spruce 2116; **wood:** chemistry **4215**; cigar boxes p. 115
T. americana 178, 2851, 3260
T. cordata: cambial activity 1051; general account 125; mine timbers **2488**; osmotic value 1852; response to fertilizers 3825; trials in Jugoslavia 3810
T. europaea 1859
T. japonica **698**
T. platyphyllos 125, **2488**, 3810
T. varsaviensis 2784
Tisserantodendron 3651
Torreya californica 3595
Tricomaria usillo 909
Triplochiton scleroxylon **1490**
Tripterygium forestii **810**
Tristania conferta **598**, 1132
Trithrinax campestris **3505**
Trophis sp. **1483**
Tsuga 258, 265, 1179, 2027, pp. 5–15
T. canadensis: frost injury 3944; in Japan 210; in Jugoslavia 1108; mortality in unthinned stands 307; phenology 2851; vegetative propagation 3789; **wood:** chemistry **3331**; essential oil **1733, 4425**; strength properties **1513**; tannin from bark **795**
T. diversifolia 1018, 1063, 2726
T. dumosa 2892
T. heterophylla: bark (uses) **795, 3474, 3481, 4404**; diseases 3946, 3977, 3989; in France 2031; in Iceland 2029; in Jugoslavia 1108; injuries—(beaver) 1349, (mistletoe) 3970, (snow) 380; litter 2730; provenance 1873; volume tables 3218; **wood:** chemical barking **3870**; chemistry **2430**; damage to seasoning kilns **3446**; grading rules **1682**; lumber recovery **1582**; preservative treatment **1642**; thermal decomposition **3313**; veneer **4286**
Tsuga mertensiana 2028–9
T. sieboldii **634**, 1018, **3423**
Turraeanthus africana 172, **1480, 4156**

Uapaca kirkiana **1704**, 1886
Ulex europaeus 1225–6
Ulmus spp.: cambial activity 1860; damping off 1149; disease (D.E.D.) 429–31, 1335; injury from fumes 383; insects 487; poisoning 396; pollen output 1045; seed—(extraction) 240, (production) 1045
U. americana: diseases 2264, 3120; injury from insecticides 4018; leaf —(anthracnose) 3120; (fall) 1961, (morphology) 1863; mill study 3260; pollen dispersal 3688
U. campestris 381, 1032, 1051, **2488**, 2788; see also *U. procera*
U. carpinifolia 1155
U. coritana 1017
U. effusa see *U. laevis*
U. fulva **809, 1738**
U. glabra (*montana, scabra*)*:* in Iceland 2029; mine timbers **2488**; osmotic value 1852; planted in Jugoslavia 3810; sowing 3760; under Spruce 3760
U. japonica **4172**
U. laevis (*U. effusa*) 3606
U. montana see *U. glabra*
U. parvifolia 272
U. procera **1490**; see also *U. campestris*
U. scabra see *U. glabra*
Umbellularia californica **2403, 4354**
Urena lobata 1339

Vaccinium myrtillus 62, 397
Vateria indica **1507**
Vepris undulata (*lanceolata*) 982
Viburnum dentatum 403
Virgilia oroboides (*capensis*) 982
Viscum album 946
Visnea 3662
Vochysia hondurensis **4154**

Wallaceodendron celebicum **2391**
Widdringtonia whytei 214
Wrightia 1900

Xanthostemon 3659
Xylia dolabriformis 1103, **1603**, 3685

Zanthoxylum piperitum **2635**
Zelkova serrata 139
Zenkerella 3658
Zizyphus jujuba nummularia 1189
Z. mucronata **756**

SUBJECT INDEX

ABRASION testing **637**, **1520**, **2427**, **4195**
Accidents 327, 885, **2199–200**, **3031**, p. 461, (legal responsibility for) 1787
Acclimatization *see* Exotics
Accountancy 570, 2365–6, 3262
Acid tolerance in plants 1942
Acorns: buried in tree **1680**; fodder value 1742–3; transport 2052
Acoustic properties of wood **2525–6**, **3311–2**, **4302–3**
Aerial photography *see* Surveys, aerial
Aerial reconnaissance 3923, 3987, 4120
Afforestation: 288–96, 1179–91, 2092–114, 2963–74, 3808–18; alkaline soils 2725; arid zones 881, 1098, 1189, 2110–13; canal banks 881; costs 1462, 3254; devastated forest land 2092; effect on water table 1026; eroded soils 1190, 2971, 3815–6; grasslands 295–6; heathland 292, 1179; karst 1181, 2973; old fields 2114, 2970, 3817–8; peatland 1180; river banks and floodland 1185–8, 2965; sands 1026, 2107–9, 2103, 2158, 2724, 2966; semi-desert in U.S.A. 3664; spoil mounds etc. 290, 2099–101; steppe 293–4, 2094, 2161; strip-mined land 1191, 2967–9, 3812–4; unstable slopes 2103–6; *see also* Shelterbelts and Geographical Index
Agar oil **3477**
Age of trees: and quality of progeny 1956, 2845; and seed production 144, 149, 1040, 1042, 2833; effect on wood properties **3344**
Agri-silviculture 197, 1100, 2142, 2905–6, 3568, 3844, 3959, p. 351, (establishment of steppe shelterbelts) 328, 1222, 3959; *see also* Taungya
Agroxone 397
Air in wood **3344**
Aircraft construction, wood products in **699**, **1572**, **1608**, **1644**, **2524**, **4190**, **4292–3**
Aircraft in forestry: 3053, p. 574; for locating diseased stands 1336, 3987; in floating operations 3923, p. 574; *see also* Direct sowing, Fire detection, Helicopters, Insect pests, Surveys
Algae, soil-inhabiting 3569
Alkaloids **804–7**, 935, **1726**, **2633**, 3594, **4415–6**
Allyl alcohol *see* Weed killers
Alternation 1972
Alternate clear-strip felling 1997
Altitude: and natural durability **652**; and tree growth 1078, 3670; *see also* Timberlines
Aluminium in plants 23
Ambrosia beetles **2565**, **3436–7**, 4052, **4350**
Ammate *see* Weed killers
Anatomy *see* Leaf, Wood etc. and Morphology
Animal damage *see* Insects, Mammals etc.
Anthracnose 1346, 2273, 3120–21, 3999–4001
Antibiotics: in wood extractives 942, **3342**; produced by—(fungi) 58, 414–5, 1321, (higher plants) 59–60, 942, **2636–7**, **3489–90**, 3601, **4418**
Ants 924: association with—(aphids) 1840, 2289, (scale insects) 1413; damage to seedlings 2957, 3187; encouragement of 3140, 4014; leaf-cutter 2310, 4065; predator of—(coreid bug) 1413, (tent caterpillar) 478
Aphids 464–5, 1356, 2291, 4021–3; association with ants 1840, 2289; benefited by feeding on galled leaves 1840; control 4023; effect of pruning 4021; heat resistance 2753; production of honey dew 2754
Arabogalactan p. 241
Aramite 2313, 3189
Arboreta 339, 1228, 3009–10, 3856
Arboriculture *see* Ornamental trees, Shade trees etc.
Arid zones: ecology 1984, 3713; research on p. 349, *see also* Afforestation
Aridity, stimulus to evolution 3610
Artificial limbs **712**
Asafoetida, collection of 1241
Aspect 1022, 1105, 2842, (and site quality) 533, 1433, 2333, (and snow damage) 3057
Assimilation *see* Physiology
Associations *see* Co-operatives
Assortments **348**, 566, 569, 1425, 2327–8, 2361, 3218–9, 3803, 4085, **4270**
Attractants 4015
Auxiliary spp. *see* Nurse spp.
Auxin *see* Growth substances
Axes **1252**

BACTERIA, soil 1028, 1817, 1819, 2739, 3567, (artificially introduced) 3827
Bacterial diseases—(of insects) 1376, (of plants) 2275, 3094, 3994
Bagworms 473
Balsams **815**, **1729**, **4422**
Bamboo: gregarious flowering 2836–7, 3685; insect pests **753–4**, 4056; pulp **1692**, **2592**; silviculture 1244; strength **622–3**, **2419**, **2423**, **3327**; vegetative propagation 267, 343, 1178, 3790
Bark: adhesives from **2626**; burning 2606; charcoal **2628**, **4399**; chemistry **639**, **799**, **1531**, **1726**, **4213**, **4409–11**; effect on soil **4410**; fibreboard **1709**, **2626**, **3474**; plastics from **2626**; pulping **3455**, **3466**, **4380**; shredder **1548**; structure **1497**; thickness 2881, 3201, 3803; utilization **1703**, **4312**, **4412–3**; volume 1419, 2320–1, 2329, 2888, 3201, 4100, 4108; wax from **2627**; *see also* Cork, Quinine, Tanstuffs
Bark-beetles 489, 491–9, 922–3, 1389–95, 2305–7, 2760, 3180–2, 4048–51; causes of epidemics 494, 496, 499, 2305, 3181; control—(chemical) 497, (programmes) 1394, 1785; host preference 1393, 2307; orientation 498; *see also* Dutch Elm disease
Barking: by thermo-pressure **2456**; chemical **1251**, **2188–90**, **3021**, **3870**, 3964, p. 115; costs **4234**; machines **347**, **1554**, **2456–9**, 2719, **3349–50**, **3875–7**, **4235–6**, (hydraulic) **1553**, **2457**, **3347–8**; to accelerate drying **3441**; to increase buoyancy **2212–3**; to prevent decay **1698**; to prevent insect attack **755**, **2563**, **3437**
Basal area calculation 518, 1415, (by 'Winkelzahl') 526, 3196–8, 4076
Battery separators **4301**
'Baumvelo' 236, (improved model) 1800
Beams **1500**, (laminated) **703**
Bear damage 452, 1353, 2279, 3127, (to transmission poles) p. 351
Beavers 1349
Bee pasture 1245
Beedi leaf industry **4421**
Beehives **4413**
Bees: carpenter **2570**; toxicity of insecticides to 1368, 2285, 3148
Beeswax, collection of p. 351
Bela forests 881
Bending **1498**, **1571**, **4263–5**; bamboo **622–3**; fibreboard **1518**, **1710**; plywood **2504–5**; preservative-treated wood **733**
Biochemistry of plants: (textbook) 55; *see also* Chemical constituents of plants
Biometry, application to taxonomy 969
Biopotentials in trees 2770
Birds: consumption of seeds 2843; damage by 1354, 2843, 4005; dispersal of seeds 152, 2840; encouragement by nesting boxes 462, 928, 3141; pest control 461, 4032, 4039–40; poisoned by insecticides 3149; populations and plant succession 1842; protection 1785
Blackberry, control of 396, 3083
Bleaching *see* Pulp
Blight: Chestnut 439–40, 2265, 3116–7, 3991–2; pole 513, 3987–8; Poplar 433; stem 3114
Blister rust 441–2, 1341
Blue-stain *see* Stain
Boats and ships **3393–4**, **4307**, p. 352, (decay in) **3394**

Boliden salts **1639**
Borascu 1208
Borers **751–5, 1652–60, 2560–70, 3432–9, 4343–51**; detection by sound **2561**; digestion of α-cellulose by larvae **1656**; laboratory culture **2560, 4343**; *see also* Marine borers and Preservation, wood
Borgana p. 241
Boxes *see* Packing containers
Bracken: compost perhaps encourages weevils 1356; effect of soil aeration on 140; inhibiting effect of extracts on Spruce 1949
Branch: habit 3616, 3696, (modified by growth substances) 1212; suppression 158, 1210, 3697
Branchwood volume 2888
Breeding, tree 74, 83–6, 118, 953–62, 1865–75, 2042, 2773–85, 2902–4, 3613–28, 3687, 3789; for—(curly grain) 1123, (disease resistance) 182, 428, 430, 2775, 3618, 2904, (frost resistance) 2904, (improved stem form) 1122, (latex production) 960; research institutes 2773, 3613; technique of progeny trials 1122; *see also* Hybridization, Provenance, Seed, and Species Index
Bridges **1278, 2216, 4299**
Briquettes **717, 1611, 2529–30, 3398, 4308–10**
Broom: as nurse species 1179; as soil improver 2125; control 2250
Brooming 4002–3
Brush cutting 2014, 2043
Bryophytes: bark inhabiting 1974; site indicators 93; *see also* Moss
Bud: formation in cultured tissue 2786; origin 69; morphology 947, 3696; mycoflora 975
Budworm 459; aerial control 4035, p. 349; aerial survey of damage 3162; environmental studies 4031; mapping vulnerable stands 1375; mass flights 3164; natural control factors 470–1; parasites 4033–5; population studies 3163; predators 4032
Buffalo, use in logging **365**
Buildings and their construction **702–5, 1597–1603, 2507–17, 3388–90, 4294–8**; moisture in **702**; research **1597, 2507**; standards **3388**; use of—(laminated members) **2509–13**, (plywood) **701**; *see also* Decay, Houses, Joints, Flooring, Doors, Beams etc.
Bulldozing 391–2, 2014, 2122, **2218**
Bundling **361, 364, 1676, 2209, 3926**–7
Burning: early or prescribed 1095, 3070; effects on—(chaparral)2743, (diameter growth) 395, (fodder grass) 394, (regeneration of savanna woodland) 1093, (soil fertility) 1124, (weight of ground fuels) 1290; for site preparation 191, 274, 1124, 2015, 2044, 2110, 3001; heather 3071; penalties for 3952; *see also* Fire, Flamethrowers
Bush Contractor' 2719
Cableways **366, 1270–4, 2201, 3034–5**, p. 461
Calcium metabolism 1025
Calipers 517, 2317
Callus formation 967, 2787
Cambial activity: controlled by—(day length) 136–7, (light) 2852, (temperature) 1051; cycle **1494, 3303**; effect on wood structure **3299**; initiation 1859–60, 3701
Cambium: area 530; *see also* Wood anatomy
Camphor 2183
Canal plantations 881, 3845 *see also* Fuel plantations, Irrigated plantations
Canker: conifers 435–8, 1338, 2264, 3989; hardwoods 439–42, 1839, 2265–8, 3115–7, 3990–4; relation to frost 435, 2264; *see also* Blister rust; Rust, stem
Cankerworms 481
Carbide-tipped tools 1552, **3359**, p. 240
Carbolineum **1641, 3402**
Card-sorting methods 1197, 4080, 4090
Carpenter bee **2570**
Cell wall *see* Wood anatomy
Cellulose: chemistry **638, 2439–45, 3331–2, 4210–2**; determination **1535, 2439**; effect of radiation on **1534, 4215**, p. 115; effect of site factors on α-cellulose content **3226, 3345**; fibre structure **777, 2438**; *see also* Hemicelluloses, Holocellulose
Chafer control 501–4, 1140, 1396, 3183–4, 4053–5
Chaparral: hydrological research in 35; inflammability 1291; microclimate 3564
Charcoal: combustibility **787**; from bark **4399**; kilns **789–10, 4396–7**; testing **3478**; use for iron smelting **2620**; *see also* Distillation
Checks in wood **769**, 3945, **4367**
Chemical constituents of plants 23–4, 55–60, 933–5, 1848–50, 2762, 3592–601; distribution in plant 3606; effect of site factors on 55, 925, 1025; taxonomic value 3598; variation, seasonal 825, 1849, 2762–3, 2768; *see also* Alkaloids, Bark, Leaf, Oils, Resin, Tannins, Vitamins, Wood
Chemicals, resistance of wood to **2516, 3446, 4229, 4298, 4301, 4334**
Chemotherapy 3986, 4072
Chermes 2291, 4021–2
Chestnuts, disinfection 2265
Chippers **4377–9**, (portable) **726–30**, 1800, **4262**
Chlordane **1365–6, 2565, 3189**, 4048, **4352**
Chlorophyll: photochemical destruction 2818; synthesis 1851, 1855–6, (inhibited by lichen) 3684
Chlorosis 2221, 2223–4, 2254
Chromosomes *see* Cytology
Chutes **1270**
Cigar-box wood p. 115
Cigarettes, leaf wrappers **4421**
Classification, decimal system 2690, 4473–4
Cleanings 1200, 3539, 3829
Clear felling 1997, 2727
Climate: indexes 14, 1129, 1801; influence on vegetation 13–18, 131, 222, 890–2, 1010, 1067, 1078–9, 1801, 2857, 2864; *see also* Forest influences, Dendrochronology, Microclimate etc.
Climbing devices 236, 1800, 3755
Cobalt content of soils and plants 3592
Colouring, wood **638**
Compasses, forestry 1447, 2348, 4113–4
Compensation *see* Valuation, forest
Competition 191, 1435, 1948–9, 2830, 3683–4; *see also* Light, Root
Compost 292, 1140–3, 1356, 1809, (methods of making) 3019
Compreg p. 350
Compression wood 3701
Concessions **587**
Cone(s): age and seed production 3692; length—(and seed production) 191, 1136, 2915, (and height of seedling) 3746; morphology 71–2, (correlation with tree form) 2781; opened by fire 153, 2838, 3693; use as a mulch 3783
Conferences: Chestnut 2708, 3538; entomology p. 240; forestry 1788, 2705, 3539–40, 4479, p. 573; land use 1768, 4483; plant and animal nutrition 1789; Poplar 1790, 3549–50; soil 21–2; tropical timbers p. 238
Consolidation of scattered holdings 866, 1772, 2683
Contour ridging etc. 3808
Conversion: coppice to high forest 1085, 1216, 2007, 3726; hardwoods to conifers 2005; irregular to regular forest 2003; mixed to pure stands 2006; pure to mixed stands 226, 2004; tropical virgin forest to management 2002
Cooling towers, deterioration of wood in **2516, 4333–4**
Cooperage **707**, 1800, **3219, 3538**
Co-operatives 875, 2689, 3262, 3529, p. 114
Coppice: conversion to high forest 1085, 1216, 2007, 3726; effect of felling season on regrowth 2875; management 1084, 1216, 1453–4; yield 182, (tables) 549, 2343–5
Coppicing: factors affecting 2874–5, 3736; of Pines 2832; *see also* Regeneration, natural
Cork: chemistry **639, 4409**; from species other than *Q. suber* 208, **4409**; research on pp. 239–40; resistance to decay **4408**; *see also Quercus suber* and Geographical Index
Corrosion of metal by wood **2575, 3405, 3446, 4226**
Cost accounting 4130
Cranes **1679, 2214**
Credit, forestry 2679
Creep in timber **2425**
Crosscutting **356, 3880–1**

Crown: class 1446; correlation of diameter with d.b.h. 284, 529, 1429, 1445, 2330, 3225; development 2330; projection, measurement of 3223; relation to increment 155–7, 552, 1430, 4092
Crown cover 552
Cruising: on aerial photographs 3242–4; *see also* Enumeration, Volume
Cryptogil **3427**
Crystalline substances in wood **774**, **2408**, **2450**, **3487**, **4175**, **4217**
Cull losses in the forest 2255, 3097, 3220, 3249, 3977
Cultivation, soil 229, 292–3, 1125–8, 1995, 2088, 3002, 3072, 3539, 3750, 3816
Cultivators 249, 1100, 2719, 3737; *see also* Ploughs
Cuprinol 1623
Cuttings *see* Propagation, vegetative
Cytology 75–9, 958–9, 1868–9, 2777–80, 3611–2

Damping off 1149, 2069–70, 2940, 2957, 3784–5, 3973–4
Dauerwald, concept of 187
Day length *see* Photoperiod
Decay in trees 420–3, 1323–6, 2254–6, 3095–103, 3975–80; correlation with age and diameter 422,425, 2255, 3978; in insect-killed trees 472, 1392; *see also* Cull, Fungus disease
Decay in wood **743–9**, **1648–9**, **2556–7**, **3421–5**, **4330–4**; effect on—(lignin) **3336–7**, (nail-holding) **3328**, (pulp) **3463–4**, (strength) **632**, **1649**, **3425**; in—(boats) **3394**, (buildings) **1648**, **3434**, (dry kilns) **3446**, (water-cooling towers) **2516**, **4333–4**; prevented by green moulds **4339**; *see also* Durability, Preservation, Rot fungi
Dedication of woodlands 2687, pp. 113–4
Deer: bionomics 54, 930; damage 54, 451, 2282, 3736, (preventive measures) 3128–9, 4010; repellents 450, 4009
Defects **773–4**, **1680–1**, **3449**, **4364–7**; *see also* Checks, Discoloration, etc.
Deficiency, nutrient 381, 2221–4, 3058, 3948–51
Defoliation: by different types of fungus 443; effects 156, 482, 1404; *see also* Insect pests of trees
Dendrochronology 542, 2336, 3233–4 *see also* Rings, growth
Dendrometers 3701, 4075, (dial gauge) 3536
Density of wood **2419**, **4191–2**; distribution in stem 553, **630**, **1509**, **3344**; of bamboo **622**; of early- and latewood **1505**; of plantation grown wood **3305**; variation with—(age of tree) **3344**, (site) **1512**, **2421–2**, **3322**; *see also* Specific gravity
Derelict stands, treatment of 1213–7, 2139–41, 2998–9
Dermatitis **3343**, **4227–8**, **4315**
Diameter: effect on felling time **2197**; instruments for measuring 517, 2317, 4074–5; logarithmic 1417; measurement 518, (from air photos) 4075; ratio of stump diameter to d.b.h. 2318; variation with compass direction 3195; *see also* Increment
Die-back 459, 1326, 1334, 2264, 3111–3, 3982. (chemotherapy) 4072; *see also* Species Index
Dielectric heating *see* Gluing, Seasoning
Dieldrin 1369, 4016
Diffusion of liquids and vapour through wood **1507–8**, **2418**, **3319–21**, **3442**, **4184–9**
Digestibility of wood **1534**, **4215**, p. 115
Dimite 3188
Direct sowing 250, 274–9, 328, 1099, 1125, 1166–70, 2009, 2015, 2045–6, 2059, 2078–80, 2906, 2954–9; drillers 279, 2959; from aircraft 2966; in furrows 2088; 'nests' 274, 279, 1222, 2958, 3003; on—(burnt slash) 2110, (contour trenches) 3808, (ridges) 1189, 2088, (screefed patches) 2955, (snow) 1166, 2966; protection from rodents 276–7, 467–8; tools 278, 1169–70, 3536, p. 115; *vs.* planting 1995, 2009; with pelleted seed 1170
Discolorations of wood *see* Stain
Disease *see* Decay in trees, Deficiency, Die-back, Fungus diseases, Virus diseases
Disking *see* Regeneration
Disorders due to unidentified causes 512–6, 2260; *see also* Die-back
Distillation, wood (destructive) **787–93**, **1718**, **2620–1**, **2628**, **3478–9**, **4396–401**
Ditch-digging equipment 8, 2719
Dithane 416
Documentation, forestry 2690–2, 3532, 4473–4
Dodder, control of 2251
'Dona' technique 2077
Doors; fire-check **1646–7**; flush **1601**, **3368**
Dormancy 136–7, 160
Drainage 302, 2963, 3934; costs 2362; effect on—(water-table) 4070, (wind-firmness) 1180; state aid for 3531; use of explosives **1279**, **2219**, 2980, **3050**, **3935–6**
Driftwood, study of 1440
Drought: effects 539–40, 1283–4, 2031–2, 3055–6; resistance 1851
Dry areas *see* Afforestation, and Arid zones
Dry rot: in brick walls **1630**, **4341**
Drying *see* Seasoning
Durability 103, **756–7**, **1641**, **1686**, **1888–90**, 3634–5, 3643, **4221**, **4332**; assessment of **644**; effect of altitude **652**; testing **2533**; *see also* Chemicals, resistance to
Durisol **2608**
Dutch Elm disease 272, 429–31, 1335, 2262; vectors 431
Dwarfing 3625, 3683
Dyeing *see* Colouring
Dye-stuffs 89–90, **824**, **827**
Early and late wood 155, 1505 2421–2, 2424, 2852
'Earth rays' 3559
Ecology, animal 52–4, 927–32, 1842–7, 2761, 3591; *see also* Birds, Deer, Soil fauna, etc.
Ecology, plant 122–79, 1011–76, 1926–92, 2812–65, 3663–719; importance in forestry 2812; methods of study 122, 162, 190, 1017; monoclimax system 1054; *see also* Forest types, Rain forests, Vegetation etc.
Economic botany 87–90, 965–6
Economics, forest 570–2, 588, 1459–65, 1471, 2359–64, 3254–61, 4127–31; bibliography 3553
Edible Pine kernels 3006, 3012
Education 878, 1750, 1788, 3533–4, 4475–7; visual aids 2693–4
Electrical properties, wood **3316**, **4178**, **4301**
Elk damage 1352, 2280, 4008
Embryology, plant 943–5, 1855–6, 3607
End - sealing compounds **1618**, **1697**, **2564**, **2574**
Engineering, forest: manual **3046**
Enrichment of tropical forest 2123
Entomology, general 456, 459, 1355–6; *see also* Insect
Enumeration surveys 525–6, 2326, (in tropical forests) 1424, 2324–5; *see also* Cruising
Enzymes **747**
Epiphytes, indication of probable incidence of disease 3972
Erosion 1769, 1825, 1828; causes 910–11, 1293, 1825; control 39, 1105, 2045, 2103–6, 2749, 2970–3, 3522, 3583, 3723; from logging roads 3583; measurement 909; of wooded streambanks **3583–4**; on Wattle plantations 911; research 3664; surveys 1824, 2746; wind 37, 2748; *see also* Afforestation, Infiltration, Shelterbelts, Shifting cultivation
Evolution, stimulated by aridity 3610
Excentric growth 3195
Exotics, trials of 199–216, 1103–15, 2026–36, 2879–96, 3739–48; *see also* Geographical and Species Indexes
Experimental forests 2026
Explosives for drainage works **1279**, **2219**, 2980, **3050**, **3935–6**
Extraction *see* Skidding, Hauling etc.
Extractives *see* Wood extractives

FAO 2709–10, 4484, p. 573
Farm woodlands 322–5, 1220, 1846–7, 2134, 2150–4; *see also* Private forestry
Fastigiate form 997
Fats 1048: *see also* Oils
Fekabit 397
Felling: direction **2196**, **3023**; hand *vs.* power **354**, **2192–4**, **3884**; Humboldt notch **349**; one-man *vs.* two-man **3882**; rules 1080, p. 116; season, effect on—(borer

attack) **755**, **2564**, (natural regeneration) 2874–5, 3736, (pulping quality) **1699**, (specific gravity) **4192**
Felling site, clearing of **349–50**, **1256–63**, **2195–6**, **3886**
Fences: electric 4010; maintenance 454; *see also* Preservation of posts
Ferbam 416
Fermentation, wood **1534**, **4215**, **4394**
Fertilizer(s): animal manure 3773; application—(aerial) 3053, (foliage spray) 3950–1, (in pellets) 1141, (soil injection) 3951; bibliography 893; filter-press 3774; 'flash' 1140; mixtures 2934; trade regulations 2935; use of 2,4-D in 264
Fertilizing 1809–10; at time of planting 1179, 2087; effect on weeds 2087; of drained peat bogs 2126; of nurseries 252, 1137, 1140–1, 2933–4, 3772–4; of plantations 292, 2125, 2981–2, 3825–6, 3949, 4071; *see also* Compost, Liming
Fibreboard **781–3**, **1704–10**, **2608–13**, **3468–75**, **4384–91**, p. 460; bending 1518, 1710; Durisol **2608**; fire-proofing **3417**, **4329**; from—(bark) **1709**, **2626**, **3474**, (sawdust) **1705**, **2610**, **3471**, **4387–8**, (tannin residue) **1690**, (veneer waste) **2611**, (wastewood) **1706–8**; Harder process **782**, **2608**; heat treatment **3475**; Homogenholz **782**, **2608**; Lignorite **782**, **2608**; Lignova **782**, **2608**; machining **1551**; microscopic structure **2612**; Novopan **782**, **2608**; permeability **1508**; plant, lay-out **3470**; semi-dry process **3472**; statistics **579**, **781**; strength **783**, **1518**, **3468–9**, **3475**; testing **3471**, **4384–5**; thermal conductivity **2613**
Fibres: bast and leaf **2642**; *Choisia* **3665**; in Belgian Congo **2643**; in Oceania 88–90; seed **1744**; *see also* Textiles
Figure of wood, vegetative propagation of trees with 2952
Filter-press, use as fertilizer 3774
Financing afforestation 3255
Finishes, wood **673–6**, **688**, **1572–5**, **1599**, **2481–7**, **3369–70**, **4266–7**; *see also* Paint
Fire: and succession 2831, 2860, 3668, 3717; effect on germination 1048, 1955; resistance and vigour classes 1950; *see also* Burning
Fire control 385–92, 1298–1306, 2231–42, 3063–5, 3952–5; *see also* Burning, Fire fighting, Helicopters, Radio
Fire damage 2243–4, 3069, 3956–7
Fire danger 1290–7, 3060–2; forecasting 1294–5, 2227–30, p. 595; fuel weights 1290; in timber yards **2579**; meteorological instruments for measurement of 384; possible relation of air turbulence 1296
Fire detection: aerial 387, 3954; look-out systems 386; preparation of maps for 1301; use of radio 2232–4
Fire fighting: equipment 390–2, 889, 1302–6, 2241–2, 3064, 3536, 3955, (rust prevention) p. 115; theoretical studies 2240; with—(chemicals) 389, (foam) 3065, (water) 388
Fire insurance 393, 2245, 3067–8, p. 575
Firebreaks: bulldozed 391–2; burnt 1300; grazed 2238–9, 3063; kept free by chemicals 1312–4; ploughed 390
Fire-killed trees, salvage 3066
Fire-proofing, wood: **1645–6**, **2553–4**, **3415–7**, **4328–9**, p. 113
Fires, forest 862, 1289: causes—(lightning) 1292–3, 3954, (railways) 3953; erratic 1296; heat of 1297; measures to prevent 3952–3
Firewood *see* Fuelwood
Fish-poison **4420**
Flamethrowers: for fire control 2242; for weed control 258, 2063
Floating and rafting **368–72**, **2210–4**, **3044–5**, **3921–32**; aerial photography **3923**; barges, loading and unloading **3931–2**; booms **360**; bundling **361**, **2210**, **3925–7**; damage to fishing **3921–2**; launching installations **3924**; log jams pp. 113, 574; rafting **3928–9**; rafts p. 574, (bound with chains) **3044**, (size) **3045**; sinking, prevention of **2210–3**; sorting—(by boat) **360**, (mechanical) **371**; surface-current maker **372**; tugs **3045**; uptake of water by logs **3441**; *see also* Flumes
Flood control 38–40
Flooding, effect on woody species 1287
Floodplain 27
Flooring **1602**, **4297**; compreg p. 350; finishes **1603**; hardwood **637**, **1520**, **2427**, p. 239; nails **3362**; parquet (prefabricated) **705**; standards **3389**
Floors: board and joist **2515**; suspended **3390**
Floras *see* Geographical Index
Floral anatomy 3609
Flotal 2739
Flowering: anomalous 1044; effect on foliage production and growth 148; gregarious 2836–7, 3685; induced 2775–6; of vegetatively propagated trees 1153; precocious 1042; *see also* Phenology
Flumes **363**, **3930**
Fluralsil **3406**
Flushing *see* Phenology
Fodder: acorns 1742–3; from waste wood **1534**, **4215**, **4394**, p. 115; heather **4402**; horse chestnuts **4435**; nutritive value 1740–1; Tamarind seed kernels **3504**; trees and shrubs 341, 1218, **1719**, 2033, 2143
Foliage: diseases 443–5, 1327, 1342–7, 2270–5, 3119–24, 3618, 3998–4001; weight 148, 156–8, 4092 *see also* Crown, Leaf, Needles
Food and Agriculture Organization *see* FAO
Food plants **3492–3**
Forest administration 573–4, 847, 2367–9, 4132–3
Forest influences on: air temperature 11–12; climate 3560, 4456; hydrology 1836, 2747, 3577–83; 'ionic run-off' 3581; rainfall 11; soil chemistry 4456; soil temperature 11; wind 11; *see also* Shelterbelts
Forest law 867–74, 1773–81, 2684–8, 3526–30, 4464–72; *see also* Law
Forest policy: general summary 1745; *see also* Geographical Index
Forest types: according to ground, flora 1089; *see also* Rain forest; Vegetation, etc., and Geographical Index
Foresters, registration of 1781
Forestry: general textbooks 180–1, 1993, 2869, 3724, (tropical) 2867, 3720; handbooks 885, 1791–3
Form, stem 2431, 2881, 2888, 3201–2, 3204, 3208, 3211, 4077, 4099, 4108–9; correlation with cone shape 2781; of tropical species 3202; quotient 520, 4077; spiral 3699; *see also* Taper
Fossil tree spp. 1897; *see also* Palaeoecology
'Frost heart' **1499**, **3411–2**
Frost heaving 286, 1958, 2067
Frost injury 226–8, 2264, 2900, 3054, 3942–3, 3947; and canker formation 435, 2264; experimental 1282; to seedlings 1048; *see also* Frost heaving, Winter injury
Frost resistance 1851, 2942 (effect of photoperiod) 2819–20; *see also* Breeding
Fruit trees 89–90, 116
Fuel plantations 2001, 2003, 2144–7; *see also* Agri-silviculture, Canal and Irrigated plantations
Fuelwood **580–1**, **718**; *see also* Waste wood
Fumes: effect on diameter increment 3557; injury to trees, 383, 1288, 2225
Fungi: antibiotic action 58, 414–5, 1321; associated with insects 4052, 4058; associated with little leaf disease 512, 1411–2; chemical activities 941, 1857–8, 3571; effect on soil structure 3570; growth and cellulytic enzymes 1945; in—(Alaska) 3087, (Australasia) 92, (Czechoslovakia) 3093, (Finland) 412, (Great Britain) 91, (Japan) 413, 3971; inhabiting—(buds) 975, (conifers) 412–3, 3971, (roots and crown of Birch) 2790–1; morphology and taxonomy 970, 1879; parasitic on marine borers **1651**; saprophytes 2824; sexual reproduction stimulated by growth substances 2769; supplied with growth substances by soil-inhabiting algae 3569; *see also* Mycorrhiza, Rot fungi etc.
Fungicides 3089, 3784; application 416; Bordeaux mixture 417; Cu preparations 428; Dithane 416; Ferbam 416; Goodrite 416; Permatox 1337; rain-proof 2068; testing 3088; Ziram 416

Fungistatic substances in wood **1541**, **4221**
Fungus diseases 416–45, 1320–47, 2253–75, 3090–124, 3683, 3972–4001, p. 350; common names 3086; control—(biological) 1330, (painting stumps) 3095, (spraying) 416–7; infection—(from stumps to healthy roots) 1329, 3095, (meteorological conditions for) 424, 426, 1338, (through root grafts) 425, (through wounds) 3976, 3990, 3993; of insects 475, **1651**; relationship to frost injury 3976, 3990, 3993; *see also* Breeding, Canker, Chemotherapy, Decay, etc., and Species Index
Fur production 2761
Furniture beetles **1654–6**, **3432–4**, **4343–6**
Furniture manufacture **713–4**, **2471**, **4305**; gluing **2476**; moisture control **1502**, **1671**; plywood **1585**; use of veneer waste **2611**

Galls, plant: aphids benefited by feeding on 1840; formation 4067; morphology 4066; unidentified 3193
Game protection *see* Wildlife management
Gas generators p. 462
Gas injury 382, 1851
'Generating surface' 530
Genetics 74–86, 953–9, 1865–76, 2772–9, 3611–2, 3618–24; *see also* Breeding
Girdling: effect on seasoning **761**; for starch depletion **2185–7**; of cull trees 2124, 2874; *see also* Poisoning
Girth: correlation with germination % 1050; shrinkage 1014; *see also* Diameter
Glossaries: forest terms from Franche-Comté 1799; Japanese forest terms 6; synecology 1962; wood properties (Spanish) **3304**
Glue joints: failures **15667–7**, **2476**; 'finger' **2470**; strength and durability **1562**, **3382**; testing **1561**
Glueline, effect on strength of plywood **3381**
Glues and gluing: **667–71**, **1561–70**, **2472–80**, **3364–7**, **4249–61**
Glues: bark **2626**; bibliography **667**; blood albumen **692**; classification **4249**; durability and climate **4254**; hardeners **2473**; protein **4254**; sampling **668**; synthetic resins **669**, **1563–4**, **2472–3**, **4255–8**; testing **668**, **4250–3**; use in carpentry **3368**; use of preservatives in **1631**; viscose pulp **3364**; viscosity **2472**
Gluing: clamps **671**; dielectric heating **1568–9**, **2476–9**, **3366**, **4260–1**; glue-spreaders **1549**; hot presses **3365**; low-voltage heating **4259**; setting times **2475**; treated wood **670**, **1570**, **3367**; wood to metal **1565**
Goodrite 416
Grading: logs **348**, **775**, **2583**, **3450**, **4368**, (veneer) **2498**, **2584**; lumber **1599**, **1682–6**, **2585–6**, **3451**, **4351**, **4369–70**; plywood **3379**; stress **3452**; *see also* Standards
Grafting: natural 1035, 1208; use in tree breeding 962, 2775–6, 2913, 3617, 3626, 3754; *see also* Propagation, vegetative
Grain: classification **620**; curly 1123; spiral **621**, **1499**, **4364–5**; wavy **2413**
Grass: control—(chemical) 191, (mechanical) 230, 1317–8, 3072; fodder species in *Casuarina* plantations 285
Grazing and pastures 331–8, 446–7, 2166–72; beneficial effects 2171; deleterious effects 2172, 3716; hydrological effects 3582; *see also* Burning; Erosion; Regeneration, natural; Weed trees and shrubs; Fodder
Green-manuring crops 298–9
Ground flora: and insect parasites 3137–8; and site quality 1809–16, 2737; anti-erosion role 300; effect on seedling development 1958, 2844; *see also* Burning, Competition, Forest types
Groundwater: effect on increment 2331, 2848; *see also* Water-table
Group regeneration 1081, 1083, 2091
Growing season *see* Phenology
Growth: cycles 541; habit 3696–9; initiation and cambial activity 1859–60; spiral 3699; stresses **2453**; *see also* Increment
Growth substances: formation 1851; in tree roots stimulate fungi 2769; in vegetative propagation 268, 270, 1151–2, 1154, 1156–8, 2942–3, 3787–9, 3793; promote budding of tissue *in vitro* 2786; seed treatment with 2057, 2928, 3763; use to widen crotch angles 1212; *see also* Weed-killers
Guards, tree 3130, 4010
Gummosis 516
Gums 822–3, (chemistry) **638**, **1536**, **1738–9**, **4432**
Gutta-percha 207, **4433**
Gypsy moth 3171–2; bionomics 3171, 3173; chemical control 1382; parasites 3173; predators 4039

Habit of growth 3696–9
Hanane p. 459
Handles, tool **2519**, **3391**
Hardboard *see* Fibreboard
Harder process *see* Fibreboard
Hauling: double loads **362**; length of log 566; truck **367**, **2207–8**, **3890–1**; truck and trailer **3910**
Heartshakes **2453**
Heartwood: crystals in **4175**; dark **4176**; false **1499**, **3296**, **3411–2**; formation **3303**, **4173–6**; per cent of log diameter **619**, **3302**; tyloses in **4172**; *see also* Wood chemistry
Heather: as fodder **4402**; burning 3071; control by ploughing 1179; effect on soil pH 1948; review of literature 1002; shaded out in Pine plantations 2724
Heathland *see* Afforestation
Hedges 2155–6, 3858–9; chemical inhibition of growth p. 115; mechanical cutters 2177; *see also* Law
Hedge plants p. 575
Heeling in 2082–3
Height: curves 1417–8, 2319; graphic determination 3199; instruments for measuring 519, 1416, 3199–200, 4075; mean stand 2319; *see also* Increment
Helicopters: for fire protection 2234–7; for spraying weedkillers 399, 404, 1309; landing places 1800, 2235
Hemicelluloses **638**, **1536**, **2442**, **4203**, **4212**, **4214**
Herbicides *see* Weed-killers
Heterosis 83–4, 2902–3, 3620
High-lead yarding *see* Cableways
Histology 967–8, 1877–8, 2786–9, 3602, 3629–30
Hole-diggers 283, **2192**, 2719
Holocellulose **1525**, **2440**, **2443**, **3338–40**, **4211–2**
Homogenholz **782**, **2608**
Honeydew 2754
Horses **3887**
Hormones *see* Growth substances
Houses, wooden **2215**, **4294**; fire risk **4295**; *see also* Buildings
Humic complexes 28
Humidity *see* Forest influences
Humus: chemical composition 28–9; classification 1807, 2732–5; C/N ratio 1027; effect of different types on respiration 2767; effect of litter removal on 30; influence of stand composition on 1027; raw—(role of light in breakdown of) 1088, (water content) 1808
Hybridization 83–4, 961–4, 1122, 2775, 2785, 2902–4, 3619–28, 3749; natural 1876, 1934, 2783–4, 3619–20; occurrence of—(metaxenia) 86, (segregation) 85, 964, 1876, 3625; vegetative 962; *see also* Heterosis
Hybrids *see* Species Index
'Hydroganic' tree feeding 1233
Hydrographical conditions 27, 35–40, 231, 881, 1823–36, 2743–7, 3526, 3574
Hydrological research 35, 906–8, 1832, 2743, 3723, 3574–83
Hydrolysis of wood **1711–3**, **2614–5**, p. 350
Hydroponics 139
Hypsometers, 519, 3200

Ice, flooding to thicken **2210**
Identification: diagnostic value of—(bark) 2792, (leaf morphology) 106, 1902, 2802; seedlings 3636; trees and shrubs in winter 2793; *see also* Keys
Ignition temperature **1501**, **3314–5**
Improved wood **2551–2**, **3414**, **4258**, **4327**; flooring p. 350; laminates **3384**
Improvement fellings *see* Release

Inarching 1163
Inclusion of foreign bodies in wood 773, 1680, pp. 239, 461; *see also* Metal detectors
Increment 537–48, 1436–45, 2335–47, 3229–40, 4096–112; cores, shrinkage of 2335; diameter 539–42, 3237, 3557, 4103–5, (measurement) 4102; effect of—(atmospheric N) 3557, (competition) 1435, (crown size) 155–7, 552, (defoliation) 1404, (drought) 539–40, 4104–5, (flowering) 148, 541, (little-leaf disease) 2316, (rainfall) 159, 540, 542, (soil) 2000, (spacing) 1959, (summer temperature) 541, 3232; forecasting 2338–9; height 2888, 3232, 3237; %, calculation of 543–4, 3235–6, 4106; radial *see* diameter; rate 545, 552, 2888; and—(bark characteristics) 2846, (fibre dimensions) **1544**, (frost injury) 3945, (pulp quality) **3345**, **3461–2**, (specific gravity) **3345**; statistical analysis 4096–8; volume 345–8, 1442, 2337, 2870–1, 2883, 3237–8, (calculation) 3204, 3228, 3236, (distribution by diameter classes) 551, 2346; weight 553, 4112; *see also* Dendrochronology; Rings, growth
Indicator species 1809–16
Infiltration and run-off: in chaparral 2743; measurement 908; *see also* Forest influences
Inflorescence, morphology 71–2
Infra-red absorption recording 939
Infra-red heating for: disinfection of Chestnuts 2265; measurement of moisture content in veneer **2416**; seasoning **2480**, **4289**
Injection: of chemicals into trees 4072; of nutrients into soil 1233
Ink disease 428, 1333, 2258–61, 3981
Insect pests of trees 41–51, 455–507, 912–26, 1355–1406, 1837–41, 2012, 2072–3, 2283–2313, 2751–60, 2788–9, 3131–87, 3585–90, 4012–67; aerial survey 3162; alternate hosts 916; bionomics 48–51, 460, 494, 3163–4, 3168, 4013; control—(aerial) 1378, 2285–6, 3053, 4036, 4063, (biological) 461–2, 1376–7, 2284, 3137–43, 3152–4 *see also* parasites, predators, (costs) 484, (legal measures) 4012, (mechanical) 4037, (silvicultural) 2283, 3151, 3155, (trap logs) 3177, 3179, 4050, *see also* Insecticides; diapause 3589–90; host preference 498, 913, 1393, 2758; keys 41, 915, 917, 3585; laboratory technique 912; larvae 44, 3586–8; light reactions 3588; meteorological factors 43, 46, 48, 50–1, 496, 1372, 2283, 2753, 4024; of seeds and cones 1370, 2072, 2912, 3156, 3161, 3751, 4029–30, 4064; of seedlings 2072–3; parasites 467, 482–3, 1363, 1399–1400, 1402–3, 2284, 3136–8, 3154, 3159, 3167, 3171, 3173–4, 4033–4, 4039, 4057, 4062, (and ground flora) 3137–8, (effect of insecticides) 2285, (laboratory rearing) 4035; population sampling 50–1, 3163, 3178, 4025; predators 478, 1413, 3139–43, 3152–3, 4014, 4032, 4056, 4060, (effect of insecticides) 2285; reporting 1785; resistance to sea water; secretions 486; sense physiology 498; sex determination 2757; virus diseases 2751; *see also* Bark beetles, Budworm etc., and under name of host trees in Species Index
Insect pests of wood **751–8**, **1650–63**, **2558–70**, **3430–9**, **4342–52**; *see also* Borers, Termites etc.
Insecticides: Aldrin 1396, 3189, 4016; Allethrin 4016; Aramite 2313, 3189; arsenical 490, 1388, 2295, 3149, 4037, 4046, 4063; 'BHC' 473, 497, 502–4, 1365–6, 1369, 1373, 1396, 2301, 2310–1, 3147, 3189, 4010, 4050, ('chemotherapeutic value') 1369, (injury to conifer seedlings) 4019; Chlordane 1365–6, 3189, 4048; 'DDT' 477, 485–7, 510, 1369, 1373, 1378, 1382, 1396, 2288, 2295, 2301, 3150, 3175, 4017, 4023, 4036, 4043, 4046, 4048, 4050, (effect on oil from treated Olive trees) 1365, (effect on wildlife) 1367, (injury to trees) 4018; Dieldrin 1369, 4016; Dimite 3188; directories of 375–6; 'EPN' 300, 3188–9; Gesarol *see* 'DDT'; Hanane p. 459; injurious effects on—(biocoenosis) 2285, (soil fauna) 4017; Lindane *see* 'BHC'; methylbromide **4347**; nicotine 510, 1369; nomenclature 4016; Ovotran 1407, 3189; paints 497; parathion 1373, 1382, 2301, 3188–9, 4017, 4019, 4023; Pestox 3189, 4048; pinosylvin 1662; Puratized 376; pyrethrin 2301; rotenone 2301; systemic 1364, 3144–6, (toxicity to bees) 1368, 2285, 3148; Systox 4048; 'TEPP' 3188, 4019, 4023; textbooks on 2284, 4015; Toxaphene 473, 1373, 3189; 'TTC' 2301
Insulating material **719**, **2613**, **3315**, **3397**, **4386**
Insurance 2704 *see also* Fire insurance
Interception 11,1029, 1833, 2744–5, 3575, (by chaparral) 2743, (effect of thinning) 3577
Intercropping *see* Agri-silviculture
'Ionic run-off' 3581
'Iron lung', wooden **4304**, p. 462
Irrigated plantations 1185, 1219, 2148–9, 2963, 3002, p. 240; *see also* Canal, Fuel plantations
Isotopes *see* Radioactive tracer methods.

Jeeps 390
Joints: bolted **2330**; nailed **1600**, **2514**; pyramid **2471**

Keys: insects 41, 915, 917; *see also* Wood identification and Species Index
Kilns *see* Charcoal, Seasoning, Seed extraction
Kinos **1542**, **3501**
Knot-hole patchers **2486**
Krilium 3565, p. 351
Kuda-kuda **359**, **3888**
'Kwik-Cut' power saw p. 350

Labour, forest: management 3248; ownership of tools 3027; working conditions 1264; *see also* Accidents, Time studies
Lac cultivation 345, 3018
Ladders 236, 3755
Laminated wood: arches **701**, **2510**; baseball bats p. 352; beams **703**; bridges **4299**; elasticity **3323**; frame construction **2509**; improved wood **3384**; *see also* Glues and Gluing, Plywood, Strength
Laminates, paper and composite: metal/wood **3385–6**; paper-base **4327**; plywood/masonite p. 241; *see also* Sandwich structures
Land use 859–63, 1768–70, 1829, 2674–9, 3522–3, 4457–61; conference 1768; *see also* Erosion, Grazing etc.
Landslides 2750
Lasolineum **1623**
Lasso-Câble *see* Cableways
Late wood 155, **1505**
Laterization 1102, 2723
Latex 3867, (breeding for production of) 960; *see also* Guttapercha, Rubber
Latitude and tracheid length **607**
Law: in relation to trees and hedges 1780, 3530, 3859, 4465; *see also* Forest Law
Layering *see* Propagation, vegetative
Leaders, replacement of 1957, 2832
Leaf: anatomy 108; chemical composition 24, 1810, 3594, 3597, 3599, (seasonal variation) 1849, 2762, 3601; colour and sex determination 2835; morphology 948, 952, 1863, 2771, (diagnostic value) 106, 1905, 2802–3; surface area and vegetation types 3706; temperature 2765; *see also* Fodder, Foliage, Needles
Lichen: in forests of Czechoslovakia 3631; inhibiting effect on seedlings 3684; water-holding capacity 36
Light: as ecological factor 192, 2817, 3674; effect on cambial activity 2852; history of forest studies 135; laboratory study 137; necessary for break-down of raw humus 1088; relative illumination 2818, (effect on root growth) 1034; strength and composition inside coniferous stands 3558; *see also* Photoperiod
Lightning: cause of fires 1292–3, 3954
Lignification 1051
Lignin: chemistry **638**, **642**, **1527–31**, **2433–6**, **3333–7**, **4204–9**; determination **641–2**; extraction **1527**; from bark **1531**; from decayed wood **1529**, **3337**; role in genesis of coal **2436**; spectroscopy—(infra-red) **2434–5**, (ultraviolet) **1528**, **1530**, **4025**; tannins **4395**
Lignorite **782**, **2608**

Lignova **782**, **2608**
Lindane *see* Insecticides
Line thinning 1203
Littleleaf disease 512, 1411–2, 2316, 3190–2
Litter, forest: ammonification 1028; amount produced by different species 24, 533, 1029, 2730–1; chemical composition 533, 1027; decomposition 24, 28, 2726–7, 2740, 3570–1; effects of removal 30, 1410, 1958, 2015, 2731; fauna 2740; nutrient contents 3566
Litter, stable **722–4**
Loading: machinery **361–2**, **1267–8**, 1800, **2208–9**, **3907–9**, **4363**, pp. 419–50; of barges **3931–2**; time studies **361**, **3043**; *see also* Bundling
Locomotive fuel **718**
Locusts 915, (habitats) 1983
Log rules *see* Timber measurement
Logs: length 566–8; *see also* Storage, Timber measurement etc.
'Logger's Dream' 2719
Logging 118, **346–72**, 885, **1247–74**, **2184–214**, **3020–45**, **3868–932**; costs 564–9, 1465, 3257–61; damage 185, 511, 1409, 1999, 3583, 4069; equipment other than saws **1252**, **1254–5**, 3536, **3874–5**; mechanized **1249**, (effect on ground vegetation) 2170, (effect on natural regeneration) 4069; organization and planning **2184**, **3020**, **3868**; pulpwood **3024**; wages 885; waste **349**, **1256**; *see also* Barking; Saws, logging; Slash disposal; Time studies; Transport
Lopping, rotational 2001
Lumber *see* Timber
Lupin: as soil improver 292, 299, 2125; for shading Oak seedlings 2941; for weed control 3959
Lyctus *see* Borers, and Preservation, wood

'Mahoganies', nomenclature p. 576
Mammals, damage by 446–54, 1348–53, 2277–82, 3126–30, 4006–11; *see also* Cattle, Deer, Rabbits etc.
Management, forest 559, 1452–4, 2354–5, 3247–9, 4121–3
Mangroves: as pioneers 1971; in Florida 3717; leaf-tying caterpillar 4028; management 559, 4124; natural regeneration 2013, 3731; self-planting of seedlings 2841, 3695; soils 1941; swamp development 1829; wood anatomy **610**; wood properties **3281**
Manna exudation **826**
Manures *see* Fertilizers
Mapping: abbreviated tree names for 3633; budworm-vulnerable stands **3281**; distribution of species 1929; site types 1816; vegetation 3712; wind damage 1281
Maps 554, 1057, 1062; reproduction 1448
Marcottage 2950
Marine borers **1650–1**, **2517**, **3393**, **3430–1**, **4325**, **4342**; digestion of cellulose by **2558**, **3430**; fungus parasites of **1651**; resistant spp. **2559**; *see also* Preservation, wood
Marine structures **2517**, **2550**, **3393**, p. 113
Marketing **577**, **582**, **1467**, **2373**, **3275**
Marking 1082, **1250**, 3830, **3869**; guides 2149
Masonite p. 241
Mathematics, textbook 2718
Maturity: financial 3254, 4129; reproductive 144, 149, 1040, 1042, 2833
Mechanization of forest operations 8; *see also* Logging
Medicinal plants 88–90, **1241–2**, **1723–6**, 1918, 2178, **2629–37**, **3488–91**, **4414–7**; *see also* Alkaloids, Quinine etc.
Mensuration, forest: 517–30, 1414–30, 2317–30, 3194–225, 4073–92; textbooks 1414, 4073
Mesquite *see* Weed trees and shrubs
Metal detectors **773**, 2719
'Metallizing' of wood **2487**, **3370**
Meteorite damage p. 461
Méthode du contrôle 4125
Methoxone 1227
Metzger salt **1623**
Mice *see* Rodents
Microclimate 10–12, 190, 1022, 3560; in chaparral 3564; in *Pinus radiata* stands 11; in tree crowns 51; near the ground 10; under Spruce 1029; *see also* Forest influences, Shelterbelts
Mildew 1344, 2940
Mine timbers: cost of production 3261, cutting **356**; economizing **677**; monograph on **4268**; preservative treatment **3022**, **3406**; statistics **584**, **3371**; suitable species **2488**, **3373**; tests **2488**; withdrawal of props **3372**
Mining, effect on vegetation 3704
Minor forest products **794–830**, **1719–44**, **2622–43**, **3480–505**, **4402–35**
Mistletoe: control 2251–2, 3969–70; haustorial system 946
Mites 509, 1408, 3188–9
Mixtures 1105, 1194–6, 2008, 2116–9, 2977–9, 3820–3; effect on root systems 142; management 1785; unsuitable 1219, 1499; *see also* Underplanting, Nurses etc.
Moisture, wood 157, **759**, **1503**, **2417**, **4179**; effect on borer attack **3436–8**; equilibrium **1503**, **4179**; in living trees **628**, **1505**, **3344**, **3441**; measurement by weighing **2416**, **3317**; meters **625–7**, **1502**, **3317**, **4180**; *see also* Diffusion, Shrinkage
Monkeys, damage by 453
Monocultures *see* Pure crops
Moose 2281
Morphology, plant 67–73, 936–52, 1861–4, 2771, 3608–9
Moss: killed by 2,4-D 399; light requirements 1976; nutrient consumption 1976; production of antibiotics 59; removal—(from shingle roofs) **750** (to assist regeneration) 2844; water-holding capacity 36, 1975
'Moto standard' 2043
Moulds prevent decay **4339**
Mucilage, chemistry of **638**, **809**, **1738**
Mulching: with—(cones) 3783, (peat) 2937, (sawdust) **720**, 1151, 2932, p. 350, (slash) 1175, (straw) 3815–6
Municipal forests 865
Musical instruments **2525–6**, **3312**, **4302–3**
Mycorrhiza 141, 1030–3, 1143, 1943–5, 1958, 2823–9, 3571; and root forking 3681; correlation with soil depth 1944; effect of—(insecticides) 1366, (lichen) 3684; necessary for Oak on steppes 293; promoted by fertilizers 1943; reaction of mycorrhizal roots to respiratory inhibitors 1853
Myrmecophily 1913

Nail-holding properties **3328–9**
Nails **665–6**, **3361–3**
Nanism *see* Dwarfing
Nature conservation 1767
Naval stores *see* Resin; Turpentine
Needle-miners 468, 2294–5, 3159, 4024–6
Needles: diffusion of sap in 3602; effect of light on 2818; effect of removal 156; length 148; utilization p. 576; *see also* Foliage, Leaf
Nematodes 2312
Nesting boxes *see* Birds
Nicotine 510, 1369
Nitrogen: accumulators 291; atmospheric 3557; distribution in plant 3606; methods of studying 138
Nomenclature: abbreviated tree names 3633; botanical, international rules 981–2; diseases of woody plants 3086; trees and timbers, common and vernacular names 976–80, 992, 1902, 2797, 2801, 3632–5, p. 576
Novopan **782**, **2608**
Nun moth 1380–1, 1785, 3174–5
Nurse and auxiliary species 291, 1179
Nurseries and nursery practice 182, 249–73, 1137–65, 2032, 2060–77, 2127, 2160, 2891, 2930–53, 3742, 3769–807, 3828, 4406; hoeing 1144; layout 249, mechanisation 249, 1144, 2060, 2936; protection 265–6, 463, 1148–50, 2067–73, 2940–1, 3784–6 (*see also* Chafer control); shading 265–6, 1140, 1148–9, 2890, 2932, 2941; soil blocks or bricks 2109, 2953; soil treatment — (acidification) 1141, (inoculation with mycorrhiza) 2827–8, (insecticidal) 1140, 1366, (sterilization) 1140–2, 1149–50, 2932, 3769–71, 3786; sowings 250–2, 2059, (covering) 2059, 2069, 2937, 3776, (density) 1140, 1171, (drilled) 1144, 3775; temporary 2009; transplanting 257, 1140–1, 2938, (into soil blocks) 2109, 2953; watering 251–5, 1140, 2077, 2894, 3776–7; weed control 256–64, 1140, 1145–7,

2061, 2063–6, 3081–2, 3778–82; windbreaks 1149; wrenching 1152; *see also* Damping off, Fertilizing, Mulching, Planting stock, Seed
Nutrients, plant: distribution affected by change in water-table 1026; effect of K on frost resistance 2820; effect of form of N 2822; in different types of litter 3566; inorganic 1851; leaching from tree tops by rain 61, 1976; methods of studying N turnover 138; removal by sedge cutting 2314; requirements 2821–2; reserves, fluctuation in 160, 940, 2762, 2768; *see also* Deficiency, and Soil(s)

Oil plants 340, **819**
Oils: agar **3477**; essential **812**, **817–8**, **1715**, **1733**, **3293**, **3499–500**, **4425–9**; foliage **1733**, **4425**; seed **821**, **827**, **830**, **1734–5**, 2182, 3593, 3665, **4429–31**; taxonomic value of variation **817**, 3655; turpentine **813–5**, **1730–1**, **2638**, **3495–7**, **4422–4**
Oleoresins 342, **813–5**, **1727**, **1729**, **2638**, **4422**
Opossums p. 115
Optical properties of wood **624**, **3309–10**
Ornamental, street and roadside trees 1230–2, 2174–6, 3011, 3857; insects pests 1360; *see also* Law
Osmosar **738**
Osmotic pressure in trees 1852, 1984, 2819–20
Ovotran 1407, 3189
Ownership systems 864–6, 1771–2, 4462

Packing containers **708–10**, **1569**, **1605–6**, **2387**, **4300**; pulping used crates **2602**
Paints and painting **676**, **1575–6**, **3368**
Palaeoecology 1963–70, 2854, 3702; *see also* Fossil tree spp.
Palms: distribution in S. Africa 3648; harvesting of fronds 1243; management of natural stands 340; oil 1734–5, 4431
Panels, prefabricated **2496**
Paper manufacture **3467**
Paper partition chromatography **1538**, **1542**, **2433**, **2446**, **4208**
Parasitic angiosperms 2251–2
Parathion 1373, 1382, 2301, 3188–9, 4019, 4023
Patanas 2860, (fires in) 1299
Pathology: research 1320; *see also* Fungus diseases etc.
Patron saint of forestry p. 114
Peat, use as fertilizer 2125
Peatlands 1810, 2126, 2980; *see also* Afforestation
Pencil manufacture **2522**
Permatox 1337, p. 349
Pestox 3189, 4048
Phenology: cambial activity 136–7, 1051, 1494, 1859–60, 2852, 3303, 3701; dormancy 137, 160, 1544, 2946–7; flowering 1041–2, 1984, 2836–7, 3685, 3690; flushing 225–6, 1282, 2849–50, 2901, 3697 (*see also* Provenance); growing season 13, 159, 1544, 2851, 3562; height growth 159; leaf—(development) 3700, (fall) 225–6; nutrient reserves 160, 940, 2762; seed production 150, 3752–3
Phosphoric acid in soil 532
Phosphorus, uptake by mycorrhizal roots 1943
Photogrammetry *see* Surveys, aerial
Photography, use in—(calculating volume of stacked wood) 3222, (fire fighting) 387, (mill studies) **2462**
Photoperiod 81–2, 136–7, 3604–5; effect on—(cold resistance) 2819–20, (segregation) 3625
Photosynthesis 1851, 1855–6, 3604–5
Phototropism 81
Phyllotaxy 67–8
Physiology, plant 61–6, 936–41, 1851–60, 2763–70, 3602–6; annual review 1851; assimilation 66, 1024, (at low temperatures) 1854, (measurement) 939; biopotentials 2770; chlorophyll synthesis 1851, 1855–6, 3605; electrical aspects of nutrition 936; leaching of nutrients from tree tops by rain 61, 1976; nutrient uptake 138–9, 1024; osmotic pressure 1852, 1984, 2819–20; permeability 1851; stomatal opening 3604; *see also* Growth substances, Respiration, Translocation, Transpiration etc.
Picker sticks **2521**
Piles *see* Preservation
Pipes: tobacco **3392**; water **706**
Pitprops *see* Mine timbers
Planimeter 2349
Planing machinery **680**
Plant chemistry *see* Chemical constituents of plants
Plant-lifting machines 249
Plantation *vs.* naturally grown wood **1512**, **3326**
Plantations *see* Afforestation, Canal, Fuel, Irrigated plantations etc.
Planting: depth 295, 1174; machines 286, 1800, 2088, 3737, 3800–2, p. 575; methods 2085–8, in—(furrows) 280, 1179, (holes) 295, 2894 (leaf cups) 2077, (pots) 196–7, 1800, 2076, 2108, 2953, (soil blocks) 2109, 2953; notch planting 281, 2953; payment for piece work 2084–5; season 286, 1172, 2081–2, 2086, 3806–7, 3812; stock—(age) 1193, 2084, (cuttings) 287, 1153, 1178, 2962, (grading) 228, 253, 1140, 1171–2, 2939, (heeling in) 2082–3, (packing) 2953, 3799, (seedling) 281, 1174, 1179, 2083, (size) 2081, 2893, (storage) 2948, 2960, 3798, (stumped) 280–1, 3797, (treatment to prevent transpiration) pp. 461, 575, (tubed) 281, (wilding) 280, 1104, 2007, 2083, 2953, 3737; tools 282–3; *vs.* direct sowing 1995; with fertilizer 2087; *see also* Afforestation, Spacing
Plastic spray p. 461
Plastics **713–4**, **2626**, **3396**, **3476**
Ploughing 1179, 1185, 2088
Ploughs 249, 390, 1126–7, 2043
Plyron p. 241
Plywood **686–701**, **1583–96**, **2497–506**, **3377–87**, **4282–93**; aircraft components **699**, **1608**, **4293**; cauls **694**; compression control **693**; core stock **2506**, **3387**; cracks **698**; fire escapes **700**; grading **3379**; machinery for manufacture **695–7**, **1590–1**, **3365–6**, **4284**; moulding **1589**, **2504–5**; orange boxes **4300**; packing containers **1569**, **1605**; patching **695–6**; pontoons **2550**, p. 113; preservative treatment **1631**, **2550**, p. 113; scarf joining **1592**; standards **1594–6**, **3380**, **4290**; storage **1593**; *see also* Glues and gluing, Laminated wood, Strength, Veneer
Poisoning of trees: accidental 2315; methods—(basal spray) 313, 1224, 2136, 2997, (frill girdling) 315, 1209, (foliage sprays) 1225, 2136, (notches or cups) 313, 2135, 2997, (stumps) 2136; to facilitate barking **1251**, **2188–90**, **3021**, **3870**, 3964; through natural root grafts 1208; *see also* Weed trees and shrubs
Poisonous spp. 89–90, 965–6, 3599; *see also* Toxicity of wood
Pole blight 513, 3987–8
Pole-peeling machines **2459**, **3350**
Poles **4270**, **4353**; seasoning **1664**; transmission **4269**, (bear damage) p. 351; *see also* Preservation
Policy 1745; *see also* Geographical Index
Pollen: allergy **1723**; cyto-morphological studies 1864, 2772; dispersal 3688; method of measuring in air 1045, 1951; storage 1952; viability 1046, 1951; *see also* Palaeoecology
Pollination: controlled 1875; cut-branch technique 962, 3626, 3628; effect of continuous bagging 1867; mechanism 3689–90
Polyploidy: induced 958, 2780; natural 76, 957, 2775–9, 3612
Porcupine damage 2278, 4006
Posts *see* Preservation
Potassium, effect on cold resistance 2820
Potatoes as taungya crop 2045, 2179, 2652
Pots—(bituminized paper) 196–7, (clay) 2775, 2953, (earthenware) 2108, (unbaked mud) 2076
Powder-post beetle **753–4**, **2567**, **3435**; *see also* Preservation, wood
Power-line rights of way: control of vegetation on 398; lay-out 2372, 3264–5, 4135, **4269**; legal aspect 1778; sown with grasses and legumes 1845
Precipitation *see* Dendrochronology, Forest influences, Rainfall, Snow
Preservation of: building timber **2549**; cross-arms **4324**; logs **2565–6**, **3427–8**, **4345**, **4350–1**; mining timber **3022**, **3406**; piles **4325**; plywood **1631**, **2550**; poles

1638–9, 2543–5, 4270, p. 461; posts **253, 738–40, 1640–1, 2546–8, 3407, 3409**; pulpwood **1697**; sleepers **1642, 3410–2, 4270, 4326**
Preservation, wood **731–42, 1615–42, 2532–50, 3399–413, 4316–26**; against—(ambrosia beetles) **2565, 3437, 4350**, (borers) **753, 1630–5, 1659–60, 2539, 4345–51**, (marine borers) **1625, 3430–1, 4325**, p. 240, (powder-post beetles) **753, 1630–1, 3435, 4345–6**, (stain fungi) **1628**, (termites) **742, 1662, 2572, 4352**, (wood wasps) **3439, 4347**; application—(Boucherie) **1639**, (brushing) **738–9**, (diffusion) **1635, 1638**, p. 461, (dip) **736–7, 739**, (hot-and-cold bath) **1640–1**, (incising) **4324**, (Kyanizing) **737, 1620**, (osmotic) **1638**, (preliminary steaming) **2537**, (pressure) **735, 1636–7, 1640**, (soaking) **739–40**, (spraying) p. 349; effect on mechanical properties **1617, 1640, 3406**; end-coatings **1618, 1697**; graveyard tests **1639, 3407**; penetration, improvement of **2542, 4323**; research **3399–401, 4316**; solvent recovery **4322**; ultrasonic **4344**
Preservative-treated wood: bending **733**; corrosiveness **3405**; fungi inhabiting **1627**; gluing **670, 1570, 3367**; handling **733**; lightning immunity **2545**; painting **676**; service records **3413**; storage **733**
Preservatives, wood: arsenical **2539**; 'BHC' **753, 2566, 4350**; Boliden salts **1639**; borax **1631**; boric acid **1629, 1632–5, 2538, 2566**; Carbolineum **1641, 3402**; cause of dermatitis **4315**; Chlordane **2565, 4352**; creosote **734, 742, 1626–7, 1639, 3404**, 4325, (residues) **4326**; Cryptogil **3427**; Cu compounds **742, 1617, 1623, 1639, 2566, 3407–8, 4321**; Cuprinol **1623**; 'DDT' **753, 1621, 4345–6, 4351**; evaluation *see* testing; fluorides **1628, 1630, 1638, 2539**, (encourage beneficial moulds) **4339**; Fluralsil **3406**; formaldehyde **3437**; Gammexane *see* 'BHC'; Greensalt **2537**; Lasolineum **1623**; mercuric chloride **737, 1620, 1630**; metals **4318–21**, *see also* Cu, Z, etc.; Metzger salt **1623**; oils **1617, 1625, 2542**; Osmosar **738**; pentachlorophenates **740, 1623, 2541, 2546–8, 3407, 3437**; Permatox **1337**, p. 349; phenols **2540**; phenyl mercury **3407**; Pine root oil **4317**; pinosylvin **1661**; rosin derivatives **3408**; silicofluorides **1617, 1628, 3406**, (corrosiveness) **3405**; sodium chloride **3406**; Tanalith **1629, 1639, 2538, 3407**; testing—(leachability) **1622–3, 2538**, (penetration) **1619–20, 2537, 2541**, (toxicity) **1621–5, 1629, 2533–6, 3404, 3408, 3426–8, 4335**; (value of) **3404**; threshold value **3402**; 'WBUS' **1630**; Zn compounds **1617, 1629, 2538–9, 3407–8**, p. 461; '666' *see* 'BHC'
Prices **1471, 4143**
Private forestry *see* Co-operatives, Credit, Farm woodlands etc. and Geographical Index
Processionary moths 3176, 4040
Producer gas **791–3**, p. 462
Propaganda 876–7
Propagation, vegetative 182, 267–73, 1151–65, 2074–5, 2942–52, 3538, 3787–94; budding 2784; cuttings 267–72, 1151–62, 1178, 2074–5, 2814, 2930, 2942–7, 2962, 3608, 3787–90, (and age of tree) 1151–2, 2945, 3788–9, (and sex of tree) 2814, (glucose treatment) 1157, (heeled) 1152, (horizontal planting) 1160, (in different media) 267, 1151, (in hotbed) 3787, (in tubes) 268, (notch-grafted) 1161, (planting out) 1157, (season) 1159, 2946–8, (seedling) 269, 329, (storage) 2948, (watering) 2075; genetical aspects 1153; grafting 962, 1163–5, 2775–6, 2942, 2951–2, 3794, (by inarching) 1163; layering 273, 1161, 3791–3, (air) 2950; root cuttings 272, 1162, 2948; suckering 2949; *see also* Growth substances; Regeneration, natural
Protection, forest: economic aspects 3937; in Canada 3938; in Switzerland 3521; manual of 3937; *see also* Fire, Fungus, diseases, Insect pests, etc.
Provenance: and—(chemical composition of seed) 2909, (date of flushing) 224–8, 2901, (frost resistance) 228, 1120–1, 1873, 2037, 2039, 2900, 3745, (morphological variation) 81–2, 224–5, 227, 1871–2, 2898, 2909; trials 218–9, 222–8, 1116–7, 1120–2, 2039–40, 2896–901, 3746–8; *see also* Species Index
Pruning 118, 316–9, 1185, 1210–1, 2137–8, 2153, 2175, 2986, 2988; bud 3841; economics of 1460; effect on—(increment) 156, (late-wood formation) 155; natural *see* Branch suppression; of seed trees 2051; tools 236, 319, 1800, 2137, 2177, 3842, p. 350; wounds—(dimension) 1211, (healing) 2138, (paints) 3843
Pulp: Bamboo **1692, 2592**; bleaching **2589, 4384**; Chemigroundwood *see* semi-chemical; dirt in **1700**; effect of—(decay) **1699, 3463–4**, (fibre dimensions) **777, 1702, 2591, 3461**, (growth rate) **3345, 3461–2**, (specific gravity) **3461**; groundwood **2589, 4384**; hardness **2607**; hardwood *see* Pulping; mechanical *see* groundwood; semi-chemical **1688–9, 2594**; soda **2590–1**; sulphate **2597, 2599**; sulphite **1691**; textile **1690, 2603, 4392–3**
Pulp and paper **776–83, 1687–1710, 2587–613, 4371–91**; development of industry **588**; materials other than wood **1693–4, 2593–4, 3457, 4371–2**; research **1687**; statistics **588, 1470, 2376–8, 3453, 4142**
Pulping: Asplund process **3462**; bark **3455, 3466, 4380**; chipping **4378–9**; costs **2593**; dead wood **3464**; floated wood **1701, 2588**, (salt-water) **2587**; hardwoods **639, 778, 1689–91, 2595–604, 3458–60, 4213–4, 4376, 4383**, (tropical) **3455–6, 4373–5**; kraft *see* sulphate; less well-known methods **4382**; mechanical **672, 3460**; mixtures **3460**; nitration **2602, 4382**; prehydrolysis **2599**; sawdust **2600, 2610**; semi-chemical **1688–9**; small wood **779**; soda **2590, 2593, 2603**; sodium hydrosulphite **2600**; sodium hydroxide **2601**; sulphate **2598, 4373, 4381**; sulphite **2593, 2595, 4382**; tannin-extraction residues **780, 1690**; *see also* Waste liquors
Pulp-mills, lay-out **3465**
Pulpwood: assessment of quality **3461**; barking **2212–3**; chipping **4378–9**; floating **2210, 2212**; handling **2209, 2214, 4377–8**; length 567–8; production costs 1465; statistics **585**; storage **351–2, 1696–9, 2210, 3429**, p. 574, (in ponds) **771–2**; transport **361, 1265, 2214**; *see also* Pulping, Geographical and Species Indexes
Pulpwood logging 184, **3024**
Punched cards *see* Card-sorting methods
Pure crops, factor in insect outbreaks 496, 3151, 3155
Pyrethrin 2301

QUARANTINE regulations 1355
Quinine and quinine plants 2652

RABBITS: damage 448, 3736, 4007; food habits 1350; repellents pp. 114, 459; *see also* Rodents
Radiation: 'earth rays' 3559; ionic **1534, 4215**, p. 115; of elements 9, 2720; solar 3558, (effect on insect attacks) 2283, 4024; ultra-violet, effect on mildew 1344; *see also* Infra-red
Radiocommunications 2232–4, 2371, 4134; cause of accidents p. 461; portable two-way sets 1800, 2233, 3263; very high frequency 2234
Radioactive tracer methods 938, 1853, **4147**
Radiocarbon dating 1963
Rafting *see* Floating
Railway: regeneration on old formations 1090; track-laying **3920**; waggons **3919**; *see also* Sleepers
Rain, removal of plant nutrients from tree-tops by 61, 1976
Rain forest: ecology 170–3, 1066, 3714–5; flora 990; tree ages 1435
Rain shadow 1019
Rainfall: correlation with increment 159, 540, 542; effect on distribution of Chestnut 1078; use as site index 14, 16; *see also* Forest influences, Precipitation
Range finders 4075
Range management 2169–70

Rat damage 3127
Rayon **4392–3**
Reaction wood: morphogenetic significance **2411, 4173**; *see also* Compression wood, Tension wood
Ready reckoners 1415
Recording of data **1250**, 1759, 4080
Recruitment, calculation of 546–8
Red heart **1499, 2220**
Reflectivity of wood **624**
Regeneration: site preparation 293, 1173, 2043, 3733, 3737, 3816—(bulldozing) 2014, 2122, (disking) 195, 292, 1097, 2016–7, 3734, (girdling of hardwoods) 2874, (manipulation of canopy) 2652, 2873, (removal of litter) 1958, 2015 (scarification) 2018–20, 2844, 2955, *see also* Slash disposal; surveys 301, 1197; *see also* Burning, Cultivation, Taungya
Regeneration, artificial *see* Nursery practice, Planting, Sowing, and Species Index
Regeneration, natural 191–5, 1086–97, 2013–20, 2872–5, 3731–6; by —(coppicing) 195, 1086, 1094, 3736, (layering) 1086, (suckering) 195, 1095–7, 2814; distance from seed source 2872; effect of—(altitude) 129, (browsing) 451, 2282, (grazing) 447, 2171, (lichen layer) 3684, (logging methods) 2874, 4069, (season of felling) 2874, 3736, (segregation trenching) 194, (slash disposal) 1091; on old logging roads and railways 1090–1; *see also* Burning, Competition, Light, etc., and Species Index
Relascope 3196–8
Release cuttings 307–12, 2002, 2005, 2120–1, 2134, 2992–6, 3260, 3819, 3840
'Re-logging' *see* Felling site, clearing of
Repellents 450, 4009, 4015, pp. 114, 459
Reproductive behaviour 143–54 1040–50, 1951–8, 2832–5, 3685–95; *see also* Propagation, Regeneration, etc.
Research centres: in E. Africa 1783; in Europe 4478, pp. 119–31, 358; in Near and Far East pp. 355–7
Reservation 3522
Resin: chemistry **638, 1540, 1727–32, 2448, 2639–40, 3495–8, 4216**; distillation **812–5, 2638, 4422–4**; natural 89–90, **816**
Resin-tapping 235, 342, 1236–40, 3013–7, **3494**, 3860–6; freshening 3014, 3864, 3866; length of period p. 241; spiral gutters 3013; stimulation, chemical 1236–8, 3015–6, 3862–4
Resonance wood **2525–6, 3312**
Respiration 66, 2767, (of Cypress knees) 3603
Respirator, emergency **4304**, p. 462
Rings, growth: formation 2852; proportion of early- and late-wood **2421–2, 2424, 4230**; qualitative study 1438; true and false 3227; *see also* Dendrochronology
Roads and roadbuilding: costs 3258; erosion from 3583; ice and snow **3906**; lay-out **3042**; machinery 8, **2217–8, 3047–8**; materials **1277**, (sulphite waste liquor) p. 462; old, regeneration on 1091, 1845
Roadside plantations 1229–30, 2174, 3845, (legal aspect) 3530; *see also* Ornamental trees
Rodents: control 276, 2277; damage 2277–8, 2895, 3127; fluctuation of populations 52; protection of seed and seedspots from 276–7, 1167–8, p. 576; *see also* Rabbits etc.
Roof constructions **4296**; *see also* Buildings
Roofing felt **725, 3462**
Root(s): competition 1958, 3679, 3683; damage by—(borers) 1386, 2311, (rodents) 2895, (termites) 2896; diseases 423–7, 1150, 2070–1, 2940, 3095–6, 3946–7, (and soil depth) 1329, 3096, 3946, (entry) 1386; distribution in soil horizons 1036–9; effect of growing in mixtures 142; forking 3681; grafts 1035, 1208, 3680; growth, effect of light 1034, 3682; respiration and transpiration 1034; systems in mixed stands 3679; wounds 1386; *see also* Mycorrhiza
Rosin **2638**
Rot *see* Decay
Rot fungi 58, **743–9**, 972–4, 1323–6, **1621–4, 1629–30, 1652, 1657, 2254–6, 2387, 2556–7**, 3097–103, **3421–5, 3975–80**; enzymes **747**; identification **743, 3422**; lignin-destroying **3423**; metabolic products **748, 4331**; moisture requirements **745, 1392**; nutrient requirements 1858; preservation in mineral oil **3421, 4330**; temperature requirements **746**
Rotation 3249, 4128
'Rotavator' 2719
Rotenone 2301
Row thinning 1203
Royalty, calculation of 2363
Rubber, wild **2641**
Run-off *see* Infiltration
Rust diseases: foliage 1327, 1342–3, 2270, 3998; stem 416, 1340, 2269, 3092, 3118, 3995–7; *see also* Blister rust, Cankers

SACCHARIFICATION *see* Hydrolysis
Safety devices on power saws **1254**
Saline soils, afforestation 1940
Salt resistance 1940, 2176
Salt spray: effect on—(foliage) 3059, (insect pests) 3059; protection given by shelterbelts 3852
Salvage *see* Logging waste
Sample-plot: methods 298, 3088; setting out 526; shape and size 3214–5
Sampling methods 522, 1421, 1424, 2313–7, 2984, 4082–3; for volume increment 2337; insect populations 50–1, 3163, 3178, 4025; log scaling **1472**; statistical basis 2313; timber for strength tests **4193**
Sand: afforestation 1026, 2724, p. 460; fixation 2107–9, 2966; *see also* Soil(s)
Sanding machines **674–5, 2484–5**
Sandwich structures **3387, 4291–2**
Sap: chemical constitution **3503**; diffusion in conifer needles 3602; pressure 1852, 2819–20
Saprophytes, change to parasitism 426–7, 1332, 2264, 2266
Sapstreak disease 1337, 2263
Sapwood: method of distinguishing **2211**; % of log diameter **619**
Sausages, made of pulp by-product p. 113
Savanna: classification 1005, 2860; effect of fire exclusion 1093; problems of management 3719–20
Sawdust: briquetting **717, 2530, 3398**; burning **1614, 2527–9**; compost **3395**; fibreboard **1705, 2610, 3471, 4387–8**; gas-turbine fuel p. 462; insulating material **719, 3397**; mulch **720, 1150**, p. 350; pulping **2600, 2610, 4387**; utilization **2531**; 'wood bricks' p. 460; *see also* Waste wood
Sawflies 50–1, 459, 505, 1356, 1404–6, 2309
Sawmilling **576, 679–85, 1577–82, 1788, 2489–96, 3374–6, 4272–81**; accuracy **1581, 2464, 3356**; allowance for wane **3357**; coefficients of utilization **683**; costs **1577–8**; frame sawing **3351–4**; knotty cants **4281**; mill studies **684, 770, 1582, 2493–4, 3376, 4280**; overrun **2493**; rip-sawing **2461–2**; smoothness of cut **2463**; tallying **2495**; trimming allowance **682**; tropical timbers **2490**; waste **1579, 1609, 4314**
Sawmills **576, 657, 685, 2489, 4274–9**; electronic sorting **681**; lay-out and design **1579, 2489**; small **4273–5**; timber conveying **2489–91, 2581–2, 4275–8, 4363, 4377**; *see also* Saws, milling
Saws, logging: assessing performance **2198, 3028–9**; maintenance **346, 3027**; one-man *vs.* two-man **3882**; power **354–6, 1253, 2191–4, 3029, 3871–3**, pp. 575–6, (circular) **1254**, (cross-cutting) **1548**, (hole-digging attachment) **2192**; tractor-mounted p. 241
Saws, milling **1548, 1579**; band **1549–50, 1578, 2467**, (surging) **656**; carbide-tipped **3359**; circular **655, 1549, 1578, 2460–2, 3351–8**, (maintenance) **1556**, (mounting) **1555**; distribution of forces in blade **3358**; for cutting in water **3536**; frame **1580, 24656**, (indicators) **3351–4**; gang 1800, **4280**; gullet, shape of **2466**; resaw 1800, **3356**; setting **858, 1557, 2465, 3355**; sharpening **859, 1550**; steels used for **1551**; stellite-tipped p. 240; swing cross-saw 1800; tooth shape etc. **2467**
Saws, pruning p. 350
Scale insects 466–7, 1373, 2292–3, 3152–5
Scaling *see* Timber measurement

Scarification *see* Regeneration; site preparation
Scrub, conversion to forest 2120–2
Seasonal variation *see* Phenology
Seasoning **759–69, 1664–75, 2573–8, 3440–8, 4353–61**; air **760, 1666, 4353**; barking to accelerate **3441**; 'centrifugal' **1674–5, 2577–8**; checking **769**; chemical **2576**; collapse **768, 3447**; control **764, 1671, 3317**; dielectric **1673, 2576, 3448, 4359–61**; discolouration during **2575**; effect of girdling **761**; end coatings **2574**; high - frequency *see* dielectric; high-temperature **763–5, 1673, 4355–6**; honeycombing **2574**; infra-red **2576**; initial m.c. **3440–2**; kiln schedules **1667–9, 3444–6, 4354–5**; kilns **2577, 4357**, (ventilation) **766, 4358**; poles **1664, 4353**; radio-frequency *see* dielectric; textbook **759**; vacuum **1673**; vapour **767, 1666, 1673, 2577, 3447**; veneer **695–6**
Second-growth wood, pulping qualities **3462**
'Seebach' system 2994
Seed: chemical composition and provenance 2909; cleaning 2929, 2966; collection 221, 233–8, 241, 251, 1785, 2046–7, 2907, 2910, 2915–7, 2929, 3666, 3760, (equipment) 236–7, 1130, 1800, 3755, (season) 1131, 2049, 2924, 3756–8; de-winging 1136, 2929, 2966, 3755; dispersal 151–4, 1042, 1047, 2839–41, 3692–4; dormancy 242, 246, 2926; drillers 249; extraction 239–40, 2917, 3757, (kilns) 238; fats **820, 1048, 1737**; from littleleaf-diseased trees 3192; germination 234, 240, 242, 1040, 1048, 2053, 2055, p. 241, (correlation with cone length) 2915, (factors affecting) 1048, 1050, 1955, 2838, 2910, 3668, (testing) 248, 1048, 1134–6, 2059, 2921, 2929, 3767–8, pp. 5–15; insect damage 1370, 2072, 2912, 3156, 3161, 3751, 4029–30, 4064; mineral content 3593; oils **821, 830, 1734–6**, 3593, 3665, **4429–31**; production 148–51, 1045, 1742–3, 2048–50, 2775–6, 2908, 2910, 2912, 3751–3, 3759, (and cone length) 191, 1136, 2915, (and pollen shed) 1045, (by cull trees) 2019, (effect of continuous bagging) 1867, (effect of growth substances) 2912, (forecasting) 2911, (induced) 1956, 2913–4, 3754; proteins 1850; respiration 2920; ripening 239, 2046, 3756; storage 241–2, 1048, 1132, 1135, 1785, 2046–7, 2052–4, 9879, 2890, 2908, 2910, 2918, 2920–1, 2928–9, 3761–2; testing 1048, 1133, 1135, 2929, 3766, pp. 5–15; transport 2052; traps 1954, 2047, 2839; treatment—(chemical) 244, 3764, (scarification) 266, 1048, 2922, 2924, (soaking) 244–5, 2056, 2890, 2922–5, 3765, 3776, (stratification) 234, 246–7, 276, 1048, 2020, 2928–7, with—(coconut water) 3764, (fungicides) 2058, (growth substances) 2057, 2928, 3763, (insecticides) 246, (rodent repellents) p. 576; viability 3668; water absorption during germination 1049; wax 3502; weight 191, 1040, 1136
Seed orchards 1129
Seed planters *see* Direct sowing
Seed trees: numbers and spacing 185, 2020, 3066; protection from wind-throw 1081, p. 238; pruning and shaping 2051; selection 2019–20
Seedling: development 143, 1040, (and age of parent) 1956, (effect of decapitation) 1957, (effect of ground cover) 1958; diseases 416–8, 1149–50, 1322, 1366, 2058, 2068–71, 2254, 2940–1, 2957, 3090–2, 3769–71, 3784–5, 3973–4; frost injury 1048; identification 3636; injury from BHC 4019; planting stock 281, 1174, 1179, 2083; self-planting of Mangroves 2841, 3695
Selection forest: calculation of growing-stock 1452; development of trees in 2330; increment 546–8, 2870, 3229
Selective cutting 186, 1998; damage to advance growth 1999; marking 1082
Sex 146–7; and rooting of cuttings 2814; determination from leaf colour 2835; distribution 2834, 3686; hermaphroditism 1043, 3687
Shade trees 3019, 3719, (insect pests) 1361
Shakes in wood **3449**; *see also* Heartshakes
Sheep grazing 446–7
Shelterbelts 326–30, 881, 1220–3, 2097, 2108–9, 2157–65, 3847–53, 3859; general silviculture 326; influence on—(crop yields) 3005, (microclimate) 1221, 3004, 3850, (salt-laden wind) 3852, (snow-melt) 1223, (soil moisture) 3849, 3851, (wind erosion) 3853; insect pests 1360; lay-out 326–7, 2161; patch or 'nest' sowing 279, 328, 1222, 2161–2, 3003; soil surveys 28; species for 2151–2, 2163–5, 2814, 2828, 3006–8, **4429**; to protect town from snow drifts p. 575; weed control in 3959; yield of timber from 2158, 3006, 3847; *see also* Hedges
Shelterwood fellings 192
Shifting cultivation 320–1, 1829, 3001, 4459
Shingles **1604**
Ships *see* Boats
Shoot growth 861–2, (to replace lost leader) 1957, 2832
Shrinkage of living trees 1014, 1441
Shrinkage and swelling of wood 157, **1504–6, 2417, 3318, 3344, 4179, 4182–3**, (in increment cores) 2335
Shuttles **2521**
Silica in wood **4225**
Silkworms fed on Birch leaves 1246
Silvicultural systems 184–9, 1080–5, 1997–2008, 2869–71, 3720, 3726–30
Silviculture: textbooks of 180–1, 1993, 2869, 3724; tropical 2867, 3720
Site quality 531–8, 890, 1431–4, 2331–4, 3206, 3240, 4093, 4095; classification by—(chemical content of foliage) 24, 900, 1810, 3058, (indicator species) 890, 896–7, 1809–16, 2737, 3206, (moisture index) 4094, (soil characters) 532, 1973, 2737–8, 3058, 3226, 3345, (stand density) 1434, 4099, (tree height) 534–5, 2737, 4099, (wood quality) **622, 768, 2421–2**, 3226, **3322, 3345**; effect of—(aspect and topography) 353, 1022, 1433, 2333–4, (depth of water-table) 2331; mapping 1785
Skidding: by hand **359, 3888**; combined with bundling **364**; costs **365**; damage 511; electric winch **3894, 3898–901**, 3904; elephant **359**; tractor **3893, 3911–5**, (effect on natural regeneration) 2874; tractor and sledge **3037–40**; tractor and winch **1269, 3033, 3036**; tractor *vs.* animal 8, 365; tree-lengths 511, (with crown intact) **3889–97**, p. 352; wheels **2202, 3041**; *see also* Cableways, Hauling
Skis **1607**
Skyline *see* Cableways
Slash: breeding ground for insects 494; disposal 1091, 1175, **1258–61**, 2016, 3155, 3733, p. 575; protects seedlings from rabbits 3736
Sledges **359, 3037–40, 3888**
Sleepers **4270**; causes of failure **1576**; hardwood p. 240; production **4271**; sterilization **749**; suitable spp. **3373**, p. 240, *see also* Preservation.
'Slime flux' 926
Slugs 4068
Smoke generators 377
Snails 508, 1408
Snow: damage 226, 379–80, 1285–6, 3057; interception 1833, 2744–5, 3577; melting, acceleration of 231; storage 1223, 1833, 2745
'Snow blight' 3863
Snow-plough **3049**
Soil(s): aeration 140; alkaline 1329, 2222–3, 2725; ammonification 28, 1028, 3567; base-exchange capacity 2332; bibliography 893; 'biological activity' 3567; calcareous 1025; carbon content 2737; catalytic activity 3567; chemistry 1810, 1848, 1941, 2222–4, 2725, 2735, 2737, (effect of rainfall on) 3575; classification 896–7, 899, 2735; clay content 2728; C/N ratio 2567; conferences 21–2; depth 3096, 3946; drought 1023, 3718; effect of—(afforestation) 1026, 2724–5, (agricultural rotations) 3537, (burning) 911, 1124, 1175, 2044, (clear felling) 2727, (flooding) 27, (litter removal) 30, (mulching) 3568, (sedge cutting) 2314, (stand composition) 1020, 1027, 1806, 2726; evolution 25, 2729; fauna 32–4, 902–5, 1821–2,

2740, 3572, (effects of insecticides on) 4017; fertility—(determination) 1809–11, (effect on chemical composition of seed) 2909, *see also* Site quality; freezing 1029, 1805, 1990; gley horizon 2331; imbibitional-water value 1973; improvers 26, 1218, 2125, 2142 *see also* Waste wood; injection of nutrients 1233; laterization 1102, 2723; leaching 3581; loess 2728; macropore space 3675; microbiology 26, 31–4, 901, 1028, 1142–3, 1329, 1817–20, 2733, 2739, 3567–72, (of laterite soils) 3567; moisture 1433, 2333, **2422**, 3564, 3575; N content 3058; nitrification 28, 1028, 1817–8, 3567; nutrients 29–30, 32, 37, 1026, 1941, 2821–2; organic-matter content 3567; permeability 2721; pH 26, 1011, 1023–4, 1941–2, 2332, 2822, 3567, (indicated by mosses) 1975; podzolization 24, 1825, 2723, profiles 25–7, 29, 896, 1023, 1809, 1973, 2722, 2733; research techniques 2721; sandy 3226, 3345; solid/liquid/gas ratio 2738; structure 1804, (effect of fungi on) 3570, (improvers) 2739, 3565, p. 351; surveys 896–8, 2741–2, 3373; textbooks 19–20; texture 17, 1973, (and freezing) 1805; tropical 171, 1067–8, 1803, 1820, 3537; types—(Caribbean) 2736, (indicated by vegetation) 1809–16, 1431, 2737 *see also* classification; *see also* Humus, Litter, Nurseries, Vegetation

Soil-blocks for seedlings 2109, 2953

'Sour felling' **2212**, **3893–7**

Sowing *see* Direct sowing, Nurseries

Sowing machines and tools 278–9, 1169–70, 2959

Spacing 284–5, 1176–7, 1959, 2084, 2089–91, 2108, 2153, 2961, 2973, 2977, 3737, 3803–5

Spar trees, artificial **3905**

Specific gravity of wood 157, 988, **1498–1500**, **1512–15**, **2420**, **3306**, **3441**, **3634**; determination **629**, **4190**; effect of—(age of tree) **630**, (growth rate) **3345**, (site factors) **622**, **3322**; effect on—(pulp quality and yield) **3461**, (seasoning) **3441**, **3443**, (strength) **1514**, **2420**; of Bamboo **622**, **2423**; of tension wood **1526**; *see also* Density

Spiral growth 3699

Splitting **4366**, (guns) **3878**

Spoil mounds *see* Afforestation

Spoolwood **2520**

Sports equipment **2524**

Sprayers 404, 1280, 1309, 1318; effects of sprays on 3940; mist or fog 404, 473, 484, 1309, 2249, 3175; motor 3183–4; smoke 377

Springwood *see* Early wood

Sprouting *see* Coppicing

Squirrel damage 449, 1351, 2279, 3126

Stain 2387: during seasoning **2575**; effect on pulp **3463**; fungi **745**, 971, **2263**, (association with insects) **2555**, **3418–9**; physiological **1649**, **3296**; protection against **1337**, **1628**, **1697**, **3420**, **4335–60**

Stand: density 530, 3224–5, (and site quality) 1434, 4099; development 284, 1430; structure 284, 304, 550–1, 1063, 1430, 2346–7, 2729, 4111

Standards: abbreviated tree names 3633

Starch: correlation with borer attack **754–5**; depletion **2185–7**, **2567**; structure **2447**, **4224**

State aid and regulation *see* Geographical Index

Statistical method: in calculating increment 4096–8; textbook 2718; use of discriminant analysis 3654

Statistics, forest: 849–57, 885, 1759–66, 2660–72, 3250, 4449–55; collection 2707; presentation 1759

Stave-mill, portable 1800

'Stellite'-tipped saws p. 240

Stem form *see* Form, stem

Steppe formation 3705

Storage: logs **755**, **2563–7**; lumber **4340**; ponds **771–2**, **1677–8**; pulpwood **351–2**, **771–2**, **1696–9**, **2210**, **3429**

Straddle trucks **2581–2**

Streamflow: methods of study 907, 2747; *see also* Forest influences

Street trees *see* Ornamental trees

Strength: fibreboards **783**, **1518**, **3468–9**, **3475**; laminated structures **703**, **1516**, **3323**, **3381–2**, **4198**

Strength, wood: **622–3**, **631–7**, **1498–1500**, **1510–23**, **2414**, **2423–7**, **3304–8**, **3323–30**, **4193–8**; effects of—(alignment of fibrils in cell-wall) **1514**, (decay) **632**, **1649**, **3425**, (growth rate) **1514**, (percentage of early and late wood) **2421–2**, **2424**, (position in tree) **1498**, (site factors) **622**, (specific gravity) **1514**, **2420**, (temperature) **4197**; plantation-grown **1512**, **3326**; testing **633–7**, **1513–23**, **4193–4**

Streptomycin, effect on chlorophyll formation 1855

Stress-grading **3452**

Stresses **1599**, **2425–6**, (set up by cleaving wood) **1521**

Strip-mined land: natural regeneration on 2975; *see also* Afforestation

Strip surveys *see* Enumeration surveys

Stumped plants *see* Planting stock

Stump removal **350**, **1257**, **1262–3**, 1307, 1800

Suberization 968

Succession 161, 164, 175, 178, 1054–6, 1074, 1446, 1967–72, 2729, 2855, 3670, 3703–5, 3715, 3812, 4459; *see also* Fire

Sugar, Maple **825**, **4434**

Summerwood *see* Late wood

Surveying 554–8, 1447–51, 2348–53, 3241–6, 4113–20; budworm-vulnerable stands 1375; instruments 1447, 2348–9, 3241, 4113–4

Surveys, aerial 555–8, 1449–51, 2350–3, 3242–6, 4082, 4115–20; bibliography 2350; costs **556–8**, 3242, 3244, 4118; estimation of tree diameters 4075; floating operations **3923**; identification of species 2353, 3243, 4120; insect outbreaks 3162; interpretation of photographs 1415–6, 1429, 2351–2, 3243; land use 555; preparation of mosaics 558; sampling for 3245; scales 4117; training centre p. 240; *vs.* ground surveys 557, 4118

Surveys forest 524–5, 1422–4, 1754, 1758–9, 2324–6, 3212–7, 4081–3

Sustained yield *see* Yield regulation

Swamps, management of 1829

Swelling of wood *see* Shrinkage and swelling

Symbiosis: ants with—(aphids) 1839, 2289, (scale insects) 1413; insects with fungi 4052, 4058; *see also* Mycorrhiza

Synecology: methods 162, 1074, 1816, 1977–8, 1989, 2353; rules of nomenclature 2853; terms used in 1962

Systox 4048

TALL oil **2605**

Tanalith **1629**, **1639**, **2538**, **3407**

Tanbark, harvesting and storage 885

Tannins **638**, **1716**, **2432**; adsorptive power **2617–8**; extraction **2616**, (from sea-water floated bark) **4404**; from lignin **4395**; from sulphite waste liquor **1717**

Tanstuffs **794–8**, **1720–2**, **2622–4**, **3481–5**, **4403–7**; American resources **3481**; bark—(Douglas Fir) **795–6**, (Eucalypt) **797–8**, (Hemlock) **795**, **4404**, (Oak) **3483**, **4405**, (Pines) **1720**, **4403**, (Spruces) **2622–3**, **3482**, (Wattle) **1721**, 1984, 2179–80, **3485**; galls **794**; leaves—(Sumac) **795**, **1722**, **4407**; valonia **2624**, **3484**

Taper: tables 520, 2341; *see also* Form, stem

Tar products **4400–1**

Taungya 2045, 3720

Taxation, forest 562, 570, 882, 1786, 2688, 2706, 3526, 3541–4, 4480–1; *see also* Valuation

Temperature: effect on—(assimilation and respiration) 1854, (forest fires) 1297, 3957, (fungal infection) 416, (germination) 1048, 2838, (increment) 541, 1121, 3232, (insect populations) 1372, 2298; (seedling development) 1958, 2070, (wood strength) **4197**; lethal 3957; of tree trunks 11; *see also* Frost, Forest influences, Winter injury

Tension wood **1526**

Tent caterpillar 479, pp. 573–4; chemical control 477, 479; diseases 475–6, 1376–7; predators 478–9

Terminology 7; *see also* Glossaries

Termites **756–8**, 915, **1661–3**, 1838, **2571–2**: control **1662**, 2288, 3150, **4352**; damage to roots 2896; resistant species 756; *see also* Preservation, wood

Textile: fibres 88–90, **3505**; pulps **1690**, **2603**, **4329–3**
Thermal properties: bark **2606**; insulating board **2613**, **3315**; wood **624**, **1501**, **1645–7**, **2415**, **3313–4**, **3324**, **4177**
Thermoperiodism 81–2
Thermoplastic behaviour of wood **1543**
Thinning(s) 118, 161, 303–4, 550, 1201–6, 2129–33, 2220, 2341, 2983–91, 3224, 3824, 3830–9, 4442; costs 569; effects on—(net precipitation) 3577, (reproduction) 193; extraction 1271, 2203, 2987; marketing 3275; marking 3820; numerical 2985; returns 1461, 2361; row thinning 1203; utilization 2361, 2987–8, 4381, p. 461; yields 1461, 2361
Thrips 1372, 3151
Ties *see* Sleepers
Timber measurement: conversion factors 528; displacement *vs.* formulae 4086; log rules 4087–8; logs 527–8, 1427–8, 3221, 4084–6; sampling **1472**; stacked wood 2321, 2329, 4089, (from air) **2580**, (from photographs) 3222; weighing 4091
Timber trade **575–88**, **1466–72**, **2373–81**, **3266–76**, **4136–44**, (directory) **1467**
'Timber Wolf' **2582**
Timberlines 165, 2521; regeneration at 2010; rising in Norway 2586
Timberyards **770**, **1676–9**, **2579–82**, **4144**, **4362–3**
Time studies: drainage works **1279**; examination of foliage for budworm 3163; loading **361**, **3043**; logging 565, **1253**, **1264**, **1270**, **2193–4**, **2196–8**, **3026–31**, 3248, 3261, **3879–87**; planting 2084–5, 2088
Tissue cultures 1877–8, 2786–7, 3629–30
Toads as insect predators 3056
'Tolerance', discussion of meaning 2813
Tool handles **2519**, **3391**
Topoclines 1017
Topography: and borer attack **3438**; and site quality 533, 1433, 2333–4
Torrent-training 1828, 2972
Toxaphene 473, 1373, 3189
Toxicity: of higher plants to one another 1948–9, 2830; of wood **3343**, **4227–8**
Toys **2523–4**
Trace elements: application 2982, 3826; symposium on 933
Tractors **1270**, **2203–6**, 2719, 3536; convertible from wheels to tracks **360**, 1800; for fire fighting 889; servicing **3915**; *vs.* jeeps **3916**
Translocation 335–7, 937–40, 1851; from tree to tree by natural grafts 1208; of weedkillers 335–7, 1208, 3078, 3960
Transpiration 55, 62–6, 1984, 2764–5, 3677; effect of—(atmospheric changes) 64–5, (leaf temperature) 2765–6, (soil temperature) 1034, (wind) 63, 2765; effect on soil moisture 3576; in chaparral 2743; measurement 62; root 1034; variation with provenance 2766
'Transpiration felling' *see* 'Sour felling'
Transplanting *see* Nurseries and nursery practice
Transport, logs and timber **358–72**, **1265–74**, **2201–4**, **3032–45**, **3888–932**; costs **361**, **576**, **2207**, (and size of wood) **361**, **1265**, (machine *vs.* horse) 8; *see also* Floating, Hauling, Logging, Skidding, Sledges, Tractors etc.
Tree classes 2330, 2846, 3727–8, 4111, (change in) 1446, 2347, 4107
Trenching, segregation 194, 1958
Tropical forests: calculation of increment 3228; enumeration surveys 1424, 2324–5; logging methods **359**, **365**, **1269**, **3032**, **3036**; possible exploitation for pulpwood 2325, **3454**; silviculture 2867; wildlife management 1843; *see also* Rain forest, Soils
Tropical hardwoods: bending **4265**; chemistry **2429**, **4203**; hydrolysis **2614–5**, p. 350; pulping **3455–6**, **4372–5**; sawing **2490**
Trucks **3917–8**; *see also* Hauling
Tumours caused by insects 486
Turpentines **813–5**, **1727–31**, **2638**, **3495–7**, **4422–4**
Turpentining *see* Resin-tapping
Twig morphology 70
Twin fruits 73

Ultrasonic treatment of wood **2437–8**, **4344**
Undergrowth, removal of *see* Weed trees and shrubs
Underplanting 188, 297, 1192–4, 2115, 2123, 2961, 2976, 3819
Understorey, soil factors affecting 1973

Valuation, forest 885, 1459, 1463–4, 2364, 3256, 4131
Vanillin p. 459
Vegetation types 163–79, 1057–76, 1979–92, 2857–65, 3706–19; classification and analysis 163, 1054, 1074, 2857; correlation with leaf-surface area 3706; effect of climate on 15–9, 169, 892, 1801, 2858–60, 3564, 3718; effect of soils on 896–8, 2858–60; effect on soil 2728–9, 2737, (biology) 1822, 3567; in relation to insect outbreaks 1983, 3135; mapping 1816, 3712; methods of study 162; *see also* Geographical Index
Vegetative propagation *see* Propagation, vegetative
Vehicle bodies **4306**
Veneer: bending tests **635**; drying **759**, **4287–9**; fire-proofing **3416**, **4328**; from tension wood **1526**; machines for making **650**, **690**, **1586**; matching **689**; measurement of — (moisture content) **2416**, (roughness) **4285**; packing containers **1605**; waste **1587**; woods for **582**, **686–7**, **1583–5**, **2498–9**, **2501**, **3378**, **4282–3**, **4286**; yield from logs **3377**
Virgin forest: conversion to management 2002; structure and development 189, 1435
Virus diseases: insect vectors benefited by infected tissues 1840; of insects 471, 476, 1377; of trees 348, 2276, 3125, 3145–6, 4002–4
Viscose *see* Rayon
Vitamins **3488**, **4417**
Volcanic soils, vegetation on 1056
Volume: determination by—(ocular appraisal) 523, 1428, 2984 (ready reckoners) 1415, (sample tree) 522, 1421, 3211; merchantable 1426, 1430, 2255; tables 521, 1420, 1451, 2322–3, 2345, 3202–10, 4077–9, 4081, 4108, (aerial) 1451; *see also* Assortments, Increment

Wages 885; piecework 2084–5, 3547, 4482; statistics 2707
Wallboard *see* Fibreboard
Wane *see* Sawmilling
Waste liquors: roadmaking material p. 462; tannins from **1717**
Waste wood: amount **715–6**, **1587–8**, **1609–10**, **4314**; handling **4279**; utilization—(boiler and domestic fuel) **1612–4**, **2527–9**, **4311–2**, (briquettes) **717**, **1611**, **2529–30**, **3398**, **4308–10**, (collection) **4272**, **4278–9**, (concrete blocks) **3368**; (fodder) **1534**, **4215**, **4394**, p. 115, (insulating material) **719**, **3397**, (litter) **722–4**, (locomotive fuel) **718**, (pulp) **780**, **2458**, **2602**, (roofing felt) **725**, (soil improvers) **720–2**, **793**, 1150, 2932, **3395**, **4313**, p. 350, (water softener) p. 241, (waxes) **786**, (wood bricks) p. 460; *see also* Chippers, Fibreboard, Lignin, Pulp, Sawdust
Water: conservation 38–40, 1826–7, 1829–32, 3576, 3580, 3583; consumption by trees 55, 1852, 3676–7; content of living trees 55; *see also* Forest influences, Hydrology
Water-cooling towers **2516**, **4333–4**
Watering: effect on natural regeneration 1958; *see also* Nurseries and nursery practice
Waterlogging 2897
Watershed *see* Catchment
Water-table 2331, 2883, 2848; effect of alteration 1026, 1328, 4070
Waxes **786**, **1720**, **2449**, **2627**, **3502**
Weathering **4229**
Webworms 4038
Weed killers: Agroxone 397; allyl alcohol 191; Ammate 313–5, 398, 406, 1207–9, 1311, 1314, 2121, 2135–6, 2994; application 399–401, 404–7, 1307, 1314, 2135, 2248–9, 3074, 3076, 3080, 3962–5; arsenical 1208, 1317–8; Borascu 1208; $CaCl_2$ 1314, 1785; 'CMU' 3961–2; Cupric sulphamate 3960; 'DCPA' 3081; Fekabit 397; $FeSO_4$ 2064; growth substances (2,4-D and 2,4,5-T) 264, 313–4, 331–7, 398–409, 1145, 1207, 1224–7, 1307–12, 1315, 2136, 2249–50, 2997, 3074, 3080, 3082–4, 3539,

3962–8, (movement in the soil) 2968; 'hormones' *see* growth substances; 'IPC' 1145, 1311, 3081; MCPA 256, 1145, 3081, 3778; MeBr 262–3, 3782; Methoxone 1227; mineral oils 257–62, 1140, 1145–7, 1226, 1313, 2064–6, 3082, 3778–81; selective phytotoxicity 1851; sodium chlorate 1208, 1313, 'TCA' 402, 1307, 1311, 3077; 'TCPA' 3081; tools for application 2135; translocation in the plant 335–7, 1208, 3078, 3960; Weedone *see* growth substances; 3,6-endoxohydrophthalic acid 396; *see also* Nurseries, Poisoning
Weed trees and shrubs, control: biological 410–11, 1224–7, 2173, 2246–7; burning 338, 2015; chemical—(costs) 405, 2249, 3962, (from the air) 399, 404, 1309, 3078, 3962, *see also* Weed killers; mechanical 338, 1308, 2014, 2043, 2124, 2247, 2997; *see also* Poisoning
Weeding 1100; *see also* Nurseries
Weeds: control—(chemical) *see* Weed killers, (costs) 1317, (mechanical) 1317–8, 3072; encouraged by fertilizers 2087; loss of water and nutrients due to 3959
Weevils 490, 1356, 1385–8, 2303–4, 3177–9, 4041–7
Wetting agents, fungicidal effects 3089
Wickerwork **4429**
Wild boar and control of forest pests 3142–3, 4060
Wilding stock *see* Planting stock
Wildlife management 930–2, 1843–7, p. 575
Wilt—(Guava) 3984, (Oak) 432, 1336, 3104–10, 3985–7, (Oil Palm) 3983
Winches **1269**, 1800, 2719, **3894–904**
Wind damage 1036, 2991, 3051, 3059; and insect attack 494; effect on mechanical properties of wood **3307**; mapping **1281**; prevention of 378, 1081, 1997–8, 2020, p. 238; resistant spp. 286, 2814; to foliage 3941
Wind firmness, effect of—(drainage) 1180, (interlocking root system) 286, 1036
Windbreaks *see* Shelterbelts
Winter injury 3944–5, *see also* Frost
'Winkelzahl' *see* Basal area
Wire ropes **366**
Witches' broom *see* Brooming
Wood anatomy **599–621**, **1488–97**, **2397–412**, **3290–303**, **4163–76**; cambial cells—(cultivation *in vitro*) **609**, (function) **608**, **1494**; cell-wall **1493**, **4169**; crystals **2408**, **4175**; diffuse-porous woods 1859; fibre(s)—(dimensions) **3299**, **4170–1**, (gelatinous) **3300**, (rate of growth) **815**, (swelling) **2410**; 'fibre-tracheids' **611–2**; heartwood formation **3303**, **4174–5**; micellar orientation **2409**, **3297–8**; parenchyma (terminology) **617**; resin canals **2412**; ring-porous woods 1859; storeyed structure **618**, **3301**; tracheids (length) **607**, (secondary wall) **2409**, **3297–8**; tyloses **4172**; vessels **610**; *see also* Rings, growth
Wood ash 1810, **3480**; effect on seedling growth 191
Wood chemistry **638–51**, **785–6**, **1524–43**, **2428–52**, **3331–42**, **4199–228**; cell-wall **1532**; determination of ash constituents **2451–2**; effect of site factors 1025; heartwood **643–4**, **649–50**, **1525**, **1537–9**, **3341–2**, **4218**, **4222–3**; preparation of samples for analysis **2428**, **4201**; tension wood **1526**; tropical woods **2429**, **4203**; variation with position in tree **644**, **3331**
Wood extractives **4216–9**, **4221–3**; taxonomic value **3332**; utilization **785–6**, **1715–7**, **2616–9**, **3477**; variation between individual trees **4219**
Wood flour **2531**
Wood identification: bibliography **599–600**; description **1489**; methods—(ash characteristics) **4164**, (chemical tests) **4163**, (tabular keys) **601**, **603**, **618**, **1491**, **2400–1**, **3291–2**; terminology **1488**
Wood, properties of: **590–652**, **1475–1544**, **2385–453**, **3278–345**, **4147–231**; glossary of terms **3304**; *see also* Durability, Electrical and thermal properties, Moisture, Specific gravity, Strength, Working qualities etc., and Species Index
Wood utilization: bibliography **589**, **4145**; manuals **1475**, **2385**, **3277–8**; research **1473–4**, **2383–4**, **4146**
Woodwasps 1397–1400, **1657**, 2308, 3185, 4057–8, 4347–9; *see also* Preservation, wood
Woodworking: chip curl **1547**; cutting force, theoretical study **1546**; handbook **1545**; machinery and tools **653–4**, **660–4**, **710–1**, **1548–52**, **1558–60**, **2455**, **2455**, **2468–9**, **3360**, **4232–3**, **4243–5**; prevention of fire **678**; research institute **3346**, p. 450; training **2454**; use of carbide-tipped tools **1552**
Working plans 1455, 2358, 4124
Working qualities **679**
Worms 1822
Wrenching *see* Nursery practice
Wyssen *see* Cableways

YIELD 3226, 3239: plant (dry substance) 3240; regulation 560–1, 1452–3, 1456–8, 2355–7, 3250–3, 4121–6; relation to increment 3229, 3231; tables 549, 1443–5, 2340–5, 2881, 3206, 3210, 4108–10

ZIRAM 416

GEOGRAPHICAL INDEX

AFRICA: conservation of vegetation 3522
Africa, East: flora 2800; research organization 1783, 2701; vegetation—(conservation) 3522, (types) 1071
Africa, North: soil conservation 2749
Africa, South-west: check list 985
Africa, tropical: climate 1801; land use 1768, 2674; medicinal plants 2630–1; timbers **2386**
Africa, West: food plants **3493**
Alaska: ecology 1969, 2831; forestry research 3536; forests and forestry 3517; vegetation types 1990
Albania: forests and forestry **575**, 1755
Algeria: distribution of forests 1019; forest statistics 1760
Angola: exotics 980–1; flora 1883; timbers **4149**; vegetation types 1987
Argentina: forest types 2863; forestry education 3533; research p. 349; soil conservation p. 113; vegetation 1076, 1991
Asia and Pacific: bibliography 2714
Assam: forest policy 2652
Australasia: fungi 92
Australia: climatic regions 3562; exotic coniferous forests 2036, pp. 238, 349; fire danger and protection 3060; flora 990, 3642; forest statistics 1766; forestry education 4477; pulp and paper industry **3453**; silvicultural research 3721; soil surveys 2742; timber statistics **586**
Austria: forestry and forest products research 2382; p. 119; timber statistics **579**
Azores: vegetation 3711

BALTIC STATES: forests and forest products **1466**
Barbados: furniture industry p. 113
Belgian Congo: erosion control 1830; flora 2799; insects **752**, **1652**, 1838; plant fibres **2643**; timbers **591**, **1478**; vegetation types 3715
Belgium: forest history 833, 2644; forest soils 1803; forestry problems 4436; legal measures for insect control 4012; research centres p. 120; timber marketing **2373**; vegetation map 3712
Bolivia: forest policy 837; forests and forestry 2657
Borneo, South: soils and vegetation 2741
Brazil: afforestation 2877; flora 100–2, 3639–40; forest bibliography 3554; forest industries **1469**; forest law 4468; timbers **3279–80**, **4151**; vegetation types 2862, 3719; vernacular names 2801
British Columbia: forest statistics 1762; land tenure 4462; taxation 1786, 3542–3
British Guiana: forest policy 4441
British Honduras: forests and forestry 996
British Somaliland: vegetation 3716
Bulgaria: forests and forest products **575**
Burma: forest administration 4133, p. 459; forestry journal 1797; forestry research pp. 355–6; forests and forestry 2655

CALIFORNIA: climate and vegetation 3564; forest laws 872; hydrology 1832
Cameroun: land use 4459; statistics 1760
Canada: establishment practice 3738; forest entomology 459, 3135, p. 574; forest fire statistics 2243, 3062; forest products statistics **4140**; forest protection 3938; forestry education 1750; forests and forestry 847; silvicultural research 3722; tanstuffs **795**; timber statistics 2662; timbers **2387**; vegetation 1989
Canary Islands: vegetation 1958
Caribbean area: soils 2736
Ceylon: afforestation 295; ecology 1054, 2860; research 2700; shifting cultivation 320; soils 1802
Chile: ecology 2864; nursery practice 2891
China: forest ecology 168
Colombia: forest law 4469–70; forestry education p. 238; land use 4460; timbers **3281–2**
Cuba: afforestation 197; check list of palms 1898; forest laws 4467; land use 4460
Cyprus: Eucalypts grown in 1013; forestry education p. 239; vegetation types and locust habitats 1983
Czechoslovakia: bryophytes 93; forest entomology 3131, 3151; forest types 3708–9; silvicultural regions 12, 3562; trials of exotics 2886; woody flora 95–6

DELAWARE: forest law 4464
Denmark: climate 14; forest law 4464; forest statistics 4452–3; forests and forestry 1752–3; regeneration methods 3737; research centres pp. 120–1; timber marketing **2373**; timber statistics 855

EAST PUNJAB: forest area 857
Ecuador: export regulations p. 239; logging and milling industry 1015; woody flora 1887
Egypt: flora 1881
Eire: afforestation policy 859; exotics 1106–7; forest insects 1357; forestry school p. 239
Eurasia, Northern: forest distribution map 1057
Europe: forest statistics 849, 2660–1; research centres pp. 119–31; timber statistics **3269**

FIJI: forest policy 2647; forests and forestry 4448
Finland: export duties **3274**; forest improvement 2061; forest law 873; forest policy 2648; forest statistics 2664; forest types 1815; labour studies 3546; law of association 4466; research centres 2698, pp. 121–2; silviculture in Lapland 1994; taxation 4481; timber floating **368–9**; timber marketing **2373**; timber statistics **580**, **2662**, **3271**; vegetation and flora 167; wage statistics 2707; woodworking industries **3276**
France: afforestation 2092; Centre Technique du Bois p. 574; co-operatives 3529; exotics 202–5, 2031–2, 3742; forest administration p. 350; forest history 4438; forest laws 1778; forests and forestry 839–40; land use in the Cevennes 2677; research centres pp. 122–3, 358; taxation 2706; vegetation types 1060, 1979
French Antilles: forest administration 573; land use 2674
French Equatorial Africa: flora 1882, 1884; forest statistics 1760
French Guiana: flora 987–8; forest statistics 1760
French Guinea: vegetation 171; vernacular tree names 2797
French West Africa: forest industry **2381**; forest statistics 1760; silvicultural principles 2867

GAMBIA: annual report p. 359
Georgia (U.S.A.): licensing act for foresters 1781
Georgia (U.S.S.R.): forest types 1089
Germany: borers **1659**; choice of species 1109–10, 2023; forest administration 574; forest entomology 1358; forest history 1748; forest legislation 1776; forest ownership 1771; forests and forestry 838; forestry pocket book 885; research centres pp. 123–6; timber statistics **2374**; vegetation types 1814, 3707; woody flora 94
Gold Coast: forest reservation 3522; textbook for rangers 3551; timber industry **3266–7**; timbers **4148**
Great Britain: animals and forestry 927, 3591; borers **1658**, **3432–3**; climate 892; dedication scheme pp. 113–4; exotics 1880, 2024, 2026; forest economics 3506; forest history 3507–8; forest law 867–8,

1773–5, 1779–80, 2685–6, 3530, 4465; forest policy 835, 3510; forest products research p. 350; forest statistics 850; hardwoods in forestry 2025; land-use policy 860; palaeoecology 2854; state aid 1782; state forests 2680–2, 3525, 4463; taxation of woodlands 4480; timber marketing **2373**; timber trade **3268**; tree names 976; trees and shrubs 2794
Greece: afforestation 2095; climate 15; forest history 2646; forest research institute p. 126; forest statistics 2669; forestry conference 3540; forestry journal 1795; forests and forestry 844
Guadeloupe: flora 987; forest statistics 1760; land use 863
Guatemala: forest statistics 4455

HUNGARY: afforestation 2093, 2963, p. 239; exotics 2887; vegetation 2093

ICELAND: forest policy 2651; forest research p. 126; nursery practice 2046; trials of exotics 2028–30
India: afforestation 881, 2103–13, p. 239; association of foresters p. 460; desert reclamation p. 239; food plants **3492**; forest administration 2369; forest area p. 114; forest grazing 2166–8; forest insects 457–8; forest law 870; forests and forestry 2652–4, 3515; land use 862; plywood industry **2382**; pulp and paper industry **588**, (materials) **1693–5, 2593–4, 3457–8, 4372–3**; research 2700; silvicultural conference 2705, 4479; timber floating **370**; trials of exotics 2034, 2892–3; vegetation types 169, 1982
Indiana: history of vegetation 1965–6
Indo-China: forest statistics 1760; forestry research p. 356; land use 2674
Indonesia: flora 103; forestry research p. 356; hydrological research 1835–6, p. 239; scientific journal 1798; trials of exotics 216, 2896; vernacular names of trees 3634; wood-rotting fungi **745**
Israel: afforestation 2096; annual report 1794; ecology of the Negev 1984, 3713; flora 99; forest research station p. 355; geobotanical research 3663
Italy: Chestnut coppice 2871; Chestnut Research Institute 4478; climate 15; ecological studies 166, 2804, 2857; exotics 206, 2888; forest law 1826–7, 3526; forest service 2367; forest statistics 851, 2663; forestry academy p. 460; patron saint of forestry p. 114; pulp and paper statistics **2376**; research centres pp. 126–7, 358; shelterbelts 2157–60
Ivory Coast: timber export trade **2380**; timbers **590**; vegetation types 171–3, 1067–70, 3714

JAMAICA: land use 4460
Japan: afforestation 289; distribution of conifers 1018; flora 97–8; forestry history 1749; forest policy 3512; forest statistics 856; forest taxation 3541; forestry bibliography 1; forestry research 3535, p. 357; forests and forestry 3514; fuel production **581**; labour studies 3545; mining timbers **3371**; plywood production **691**; trials of exotics 210, 2884; useful plants 87; vegetation types 1063–5, 2858
Java: forests and forestry 2659; tree species 1890
Jugoslavia: afforestation 861, 2011, 3809–11; extent and management of Pine forests 235; forest laws 869; forest products statistics **4138–9**; forest reserves 3524; forest statistics 2670, 4449; forestry journal 2716; introduction of exotics 1108; nurseries 2931; seed collection 233–4; vegetation types 1020, 1061–2, 3710

KASHMIR: flora 2795
Kenya: match factory p. 114

LABRADOR: forests and forestry 3516; phytogeographical regions 174; timber concessions p. 238
Latin America: land use 1769, 4460
Lebanon: forest history 4439
Liberia: forest statistics 4454
Luxembourg: forest types 1058

MADAGASCAR: forest statistics 1760; introduced species 214; land use 2674
Malaya: forests and forestry 4437; land use 2675–6; rain forest 1066; sawmills **4273**; timbers **1477, 2395**; vernacular names of trees 978; weed control 1316–8
Manchuria: timbers 1510–11
Martinique: flora 987; forest statistics 1760
Maryland: forest law 4464
Massachusetts: forest law 4464
Matabeleland: vernacular names of trees 979
Mauritius: forest policy 837
Mexico: diseases and pests 3052; forest administration p. 114; forest law 3528; forests and forestry 996, **1247**; national parks 858; opening up of forest area p. 351
Michigan: forest law 4464
Minnesota: forest law 4464
Moluccas: tree species 1888–9
Montana: timber mortality 374
Morocco: forest statistics 1760; forests and forestry 4445–6; plywood factory p. 114
Mozambique: flora 1885; forests and forestry 1756; timbers **4150**; vegetation types 1988

NETHERLANDS: forest entomology 1359; forest law 874; Heidemaatschappij 2704; research centres pp. 127–8; regeneration methods 2009; timber marketing **2373**; timber statistics 854; trials of exotics 2880–1
New Caledonia: forest statistics 1760
New Guinea: timbers **593**
New Hampshire: forest law 4464; forest yield tax 3544
New Hebrides : forest statistics 1760
New South Wales: insect pests 1362, 2760
New Zealand: afforestation 2098; exploitation of softwood plantations p. 115; forest law 4472; forest policy 4442; introduced mammals 929; land use 4461; stabilization of sand dunes p. 460; timbers **592, 2389**
Nicaragua: forests and forestry 1758
Nigeria: savannah vegetation 3522; silviculture 3720
Northern Ireland: forestry in 2649–50
Northern Rhodesia: fibreboard from waste wood p. 460
Norway: afforestation 2678–9; exotics 2027; floating pp. 460–1; forest law 4464; forest statistics 4450; forest technology **576**; forests and forestry 1753; levy on sales 2688; research centres pp. 128–9; state aid for forest drainage 3531; timber marketing **2373**; timber statistics 2662, **3272**; timberline 2856; wage statistics 2707
Nyasaland: trials of exotics 2035

OCEANIA: forest statistics 1760; land use 2674; useful plants 88–90
Oklahoma: forests and forestry 2656
Ontario: forest policy 4440
Oregon: forest laws 4468
Ozarks: history of vegetation 1967–8

PACIFIC region: bibliography 2714; flora 3643
Patagonia: palaeoecology 1970
Pakistan: afforestation p. 240; co-operative forestry 875; forest entomology **2562**, 3133; forest statistics 2671; forest types 2859; forests and forestry 845–6, 4458; irrigated plantations p. 240; medicinal plants **2629**; trials of exotics 211, 1103
Paraguay: forestry mission to p. 240
Peru: flora 989, 3641; forestry research 3537
Philippines: exotics 3743; forest law 4471
Poland: bibliography 2712; climatic data 3561; documentation centre 4474; soil fauna 3572; trials of exotics 3740; vegetation types 1812–3
Portugal: distribution of Cork Oak 1234; forest insects 455; forest service 2368; regulation of cork and resin industries p. 115; research centres 2696–7, pp. 129–30, 358; trials of exotics 201, 1111, 3739; wood-rotting fungi **743**
Puerto Rico: afforestation 196; exotics 1115

QUÉBEC: forest situation 2673

RÉUNION: forests and forestry 1760, 2974

ST. PIERRE and MIQUELON: forest statistics 1760
Samoa: forests and forestry 4447
Sarawak: forest research 880; timber extraction **359**, **3888**; timbers **2388**, **4153**
Scotland: co-operatives 2689, p. 114; forest history 2645; forests and forestry 1747, 4444
Seychelles: forest policy 4443
Siam: flora 2796; forestry research p. 357; Teak concessions p. 461
Sicily: afforestation 1182
Sierra Leone: soil conservation 1829, 3522
Singapore: forestry 4437
South America: flora 3638
Southern Rhodesia: forest law 871; woody flora 1886, 3637
Spain: afforestation 288, 1183–5; climatic regions 3563; Eucalypt plantations 2033; forest hydrology 1828; forest statistics 852–3; forests and forestry 841; research centres 2695, p. 130
Spanish Guinea: vegetation types 1986
Sudan: climate 17; conservation 3522; forest types 170, 1909, forestry journal 2; shifting cultivation 321; timber floating **368**
Surinam: forests and forestry 2658; timbers **4152**
Sweden: forest education 3534; forest law 4464; forest statistics 2665–7, 3520, 4451; forests and forestry 842–3, 1754; housing for forest workers 3548; insect pests 920, **1657**, **3434**; labour, legislation on 883–4; land use 3523; mechanization of forest operations 8; nature protection 1767; nurseries 2061; research centres pp. 130–1; taxation 1786; timber statistics 2662; wage statistics 2707; wood research **1473**
Switzerland: consolidation of holdings 866, 1772, 2683; ecology 190; fire statistics 2226; forest administration 2684; legal responsibility for accidents 1787; protection forest 3521; research centres p. 131; timber trade **1468**; vegetation types 896, 1980–1

TAHITI: vegetation 2865
Tanganyika: beeswax collection p. 351; conservation of vegetation 3522; forest law 3727
Timor: botanical expeditions 1891; forest types 1992; history of Sandalwood logging 1016; tree species 1926
Togo: forest statistics 1760
Transcaucasia: distribution of conifers 3670
Transjordan: flora 99
Trieste: forests and forestry 1751
Tunisia: forest statistics 1760
Turkey: bibliography 2713; climate 16; forest education 4476, p. 461; forest history 3509; forest law 831; forest statistics 1761; forestry journals 2717, 3555; forestry research p. 355; forests and forestry 831–2, 3511; plant geography 2812

UBANGI SHARI: tree species 2798
Uganda: dedication scheme 2687
Union of S. Africa: afforestation 2097; conservation of vegetation 3522; exotic softwoods **1476**, 1757; forest entomology 483; forestry 1757; research 2702; termites **1663**; vegetation types 1072–3; woody flora 982–4
U.S.A.: Cork Oak 1235; federal aid for fire protection 2231; forest history 834; forest laws 1777; forest policy 1746; forest products research **1474**, **2384**; forest research 879, 2703; forest statistics 1763–5, 2672; forest taxation 882; forestry education 1750; hydrological research 1831, 3723; law of trespass 1464; pulp and paper industry **1470**, **4142**; report of O.E.E.C. mission 3664; silviculture 181, 3723; soil conservation 2749; tanstuffs **3481**; timber statistics **582–5**, **2377–9**, **2662**, **3273**, **4141**; vegetation types 175–9, 1074–5, 1990, 2861, 3717–8
U.S.S.R.: afforestation 293–4, 2094, 2102, 2964–6; exotics 208, 1104–5, 2882–3, 2889–90; felling rules 1080, p. 116; forest administration 4132; forest distribution 1057, 3513; research institute 2699; resin tapping 3864, p. 241; seed station p. 241; seed supplies 2907; vegetation types 1089, 1105

VENEZUELA: flora 986; forests and forestry 848, 3518–9; oil-producing plants **819**; vegetation types 3706

WESTERN AUSTRALIA: fire control 1298
Wisconsin: forest law 4464